

FIG. 1A

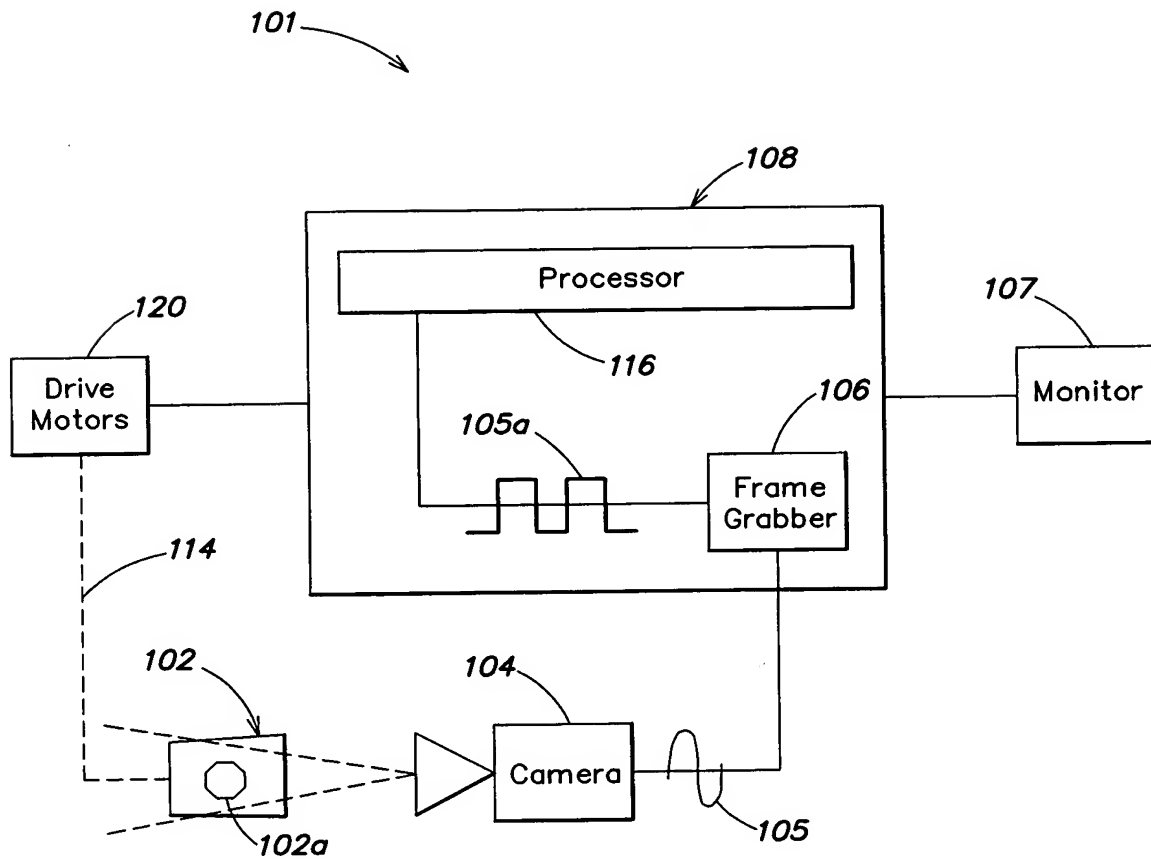


FIG. 1B

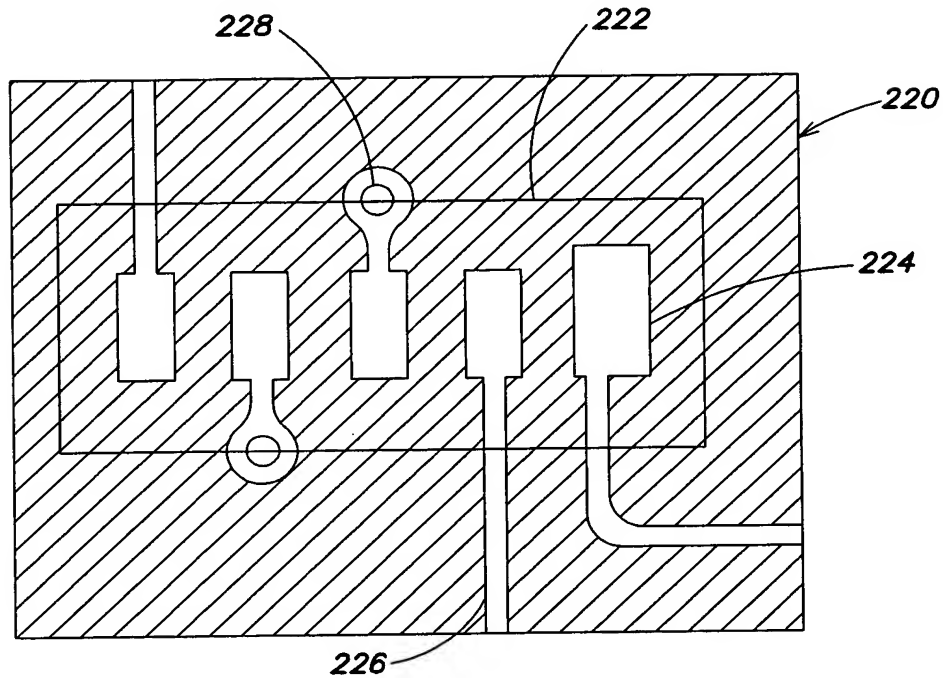


FIG. 2A

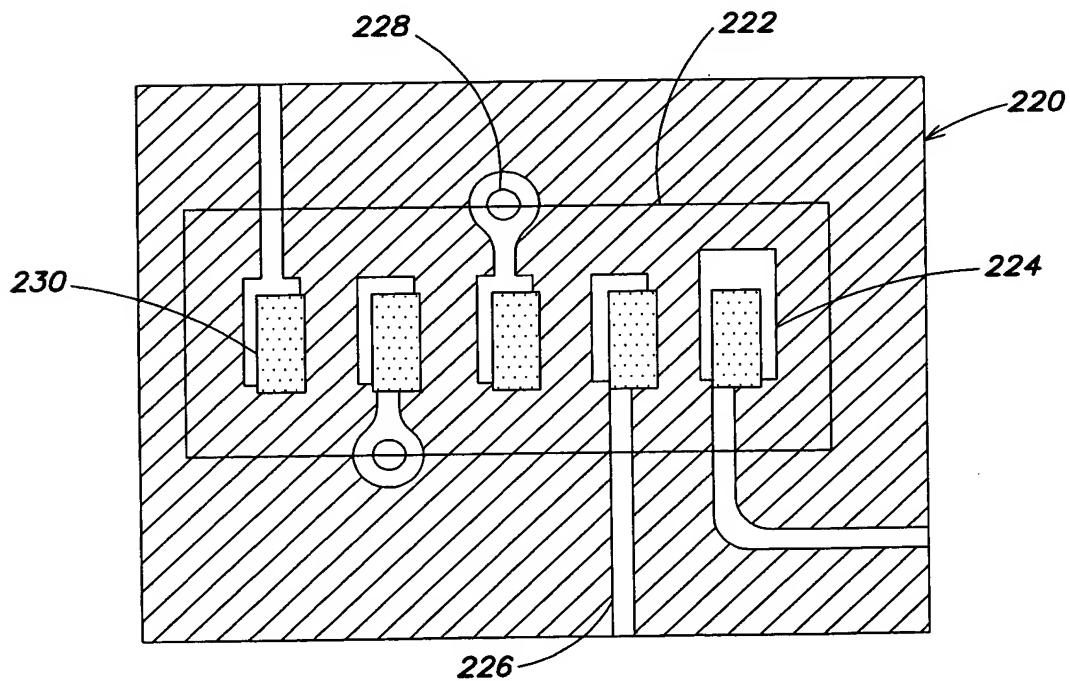


FIG. 2B

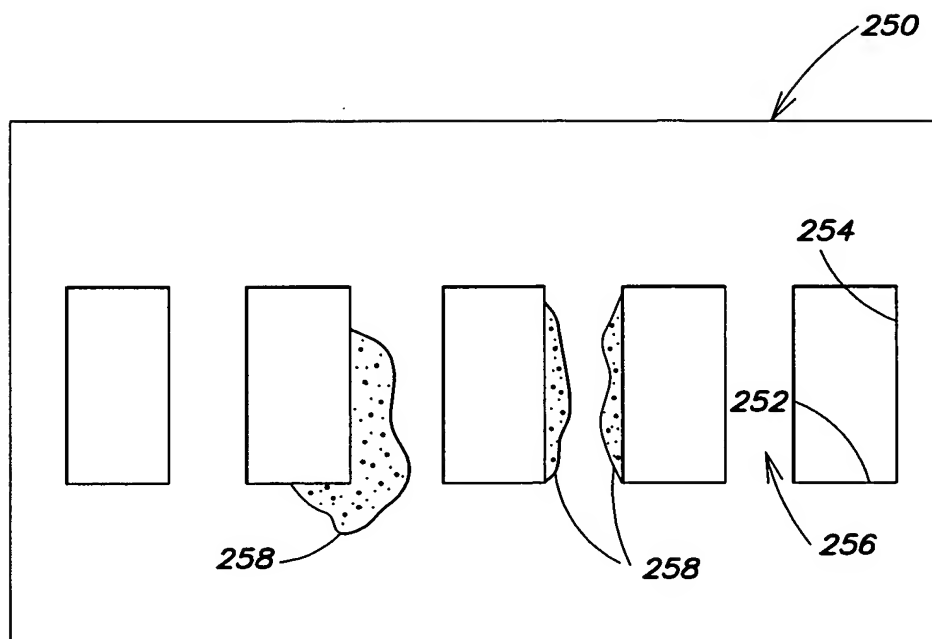


FIG. 2C

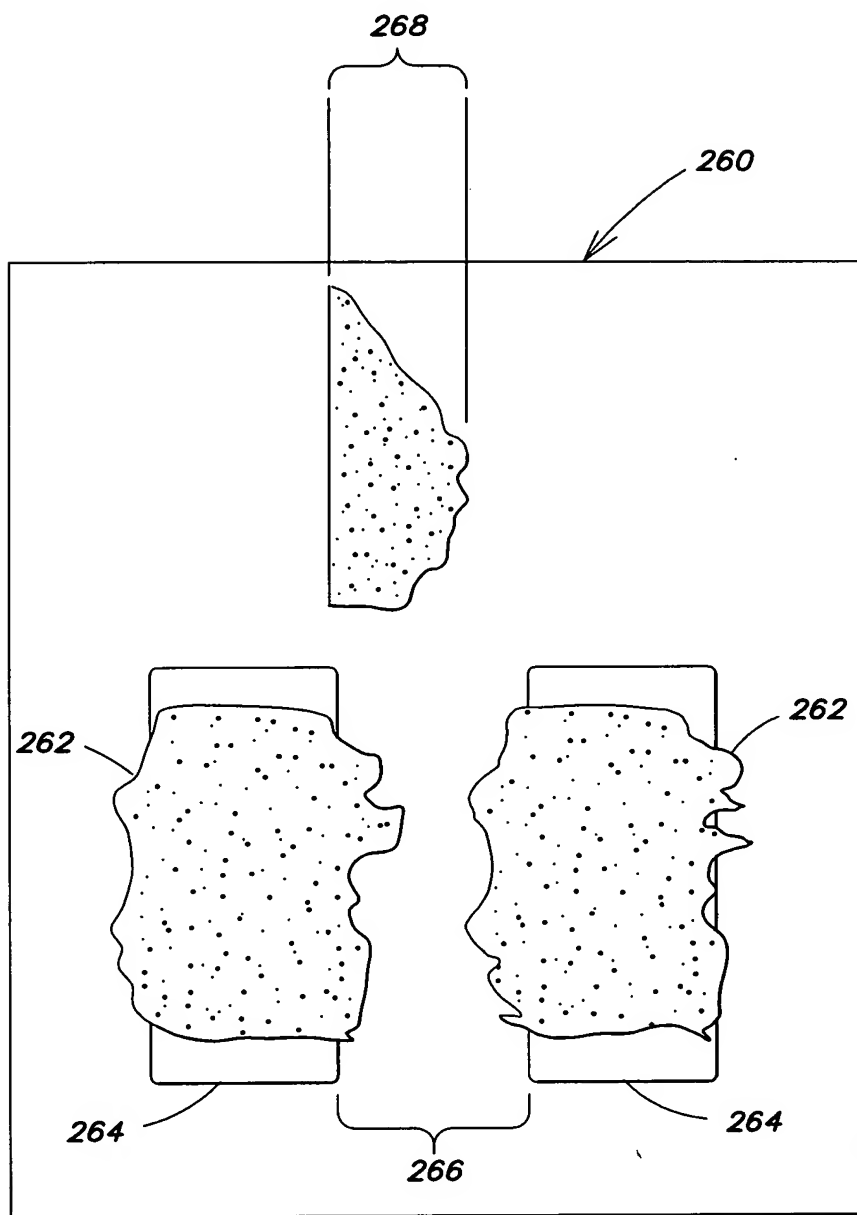


FIG. 2D

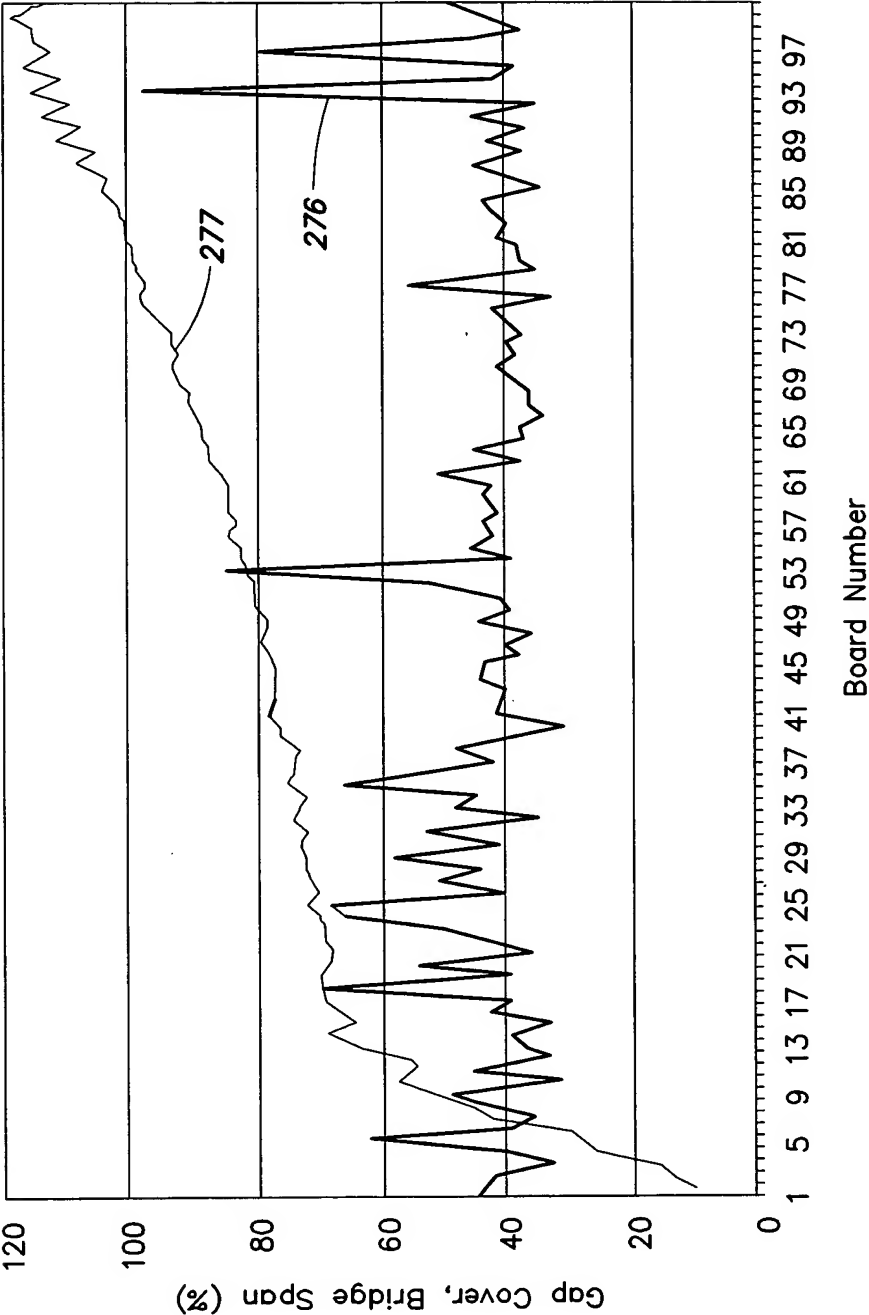


FIG. 2E

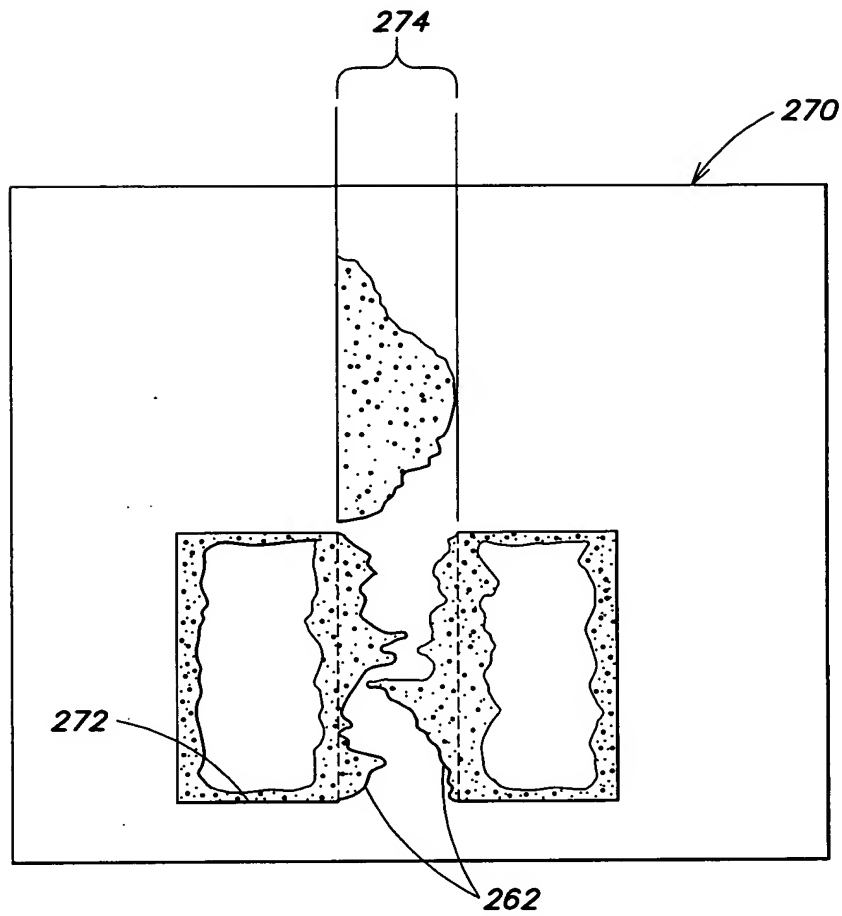


FIG. 2F

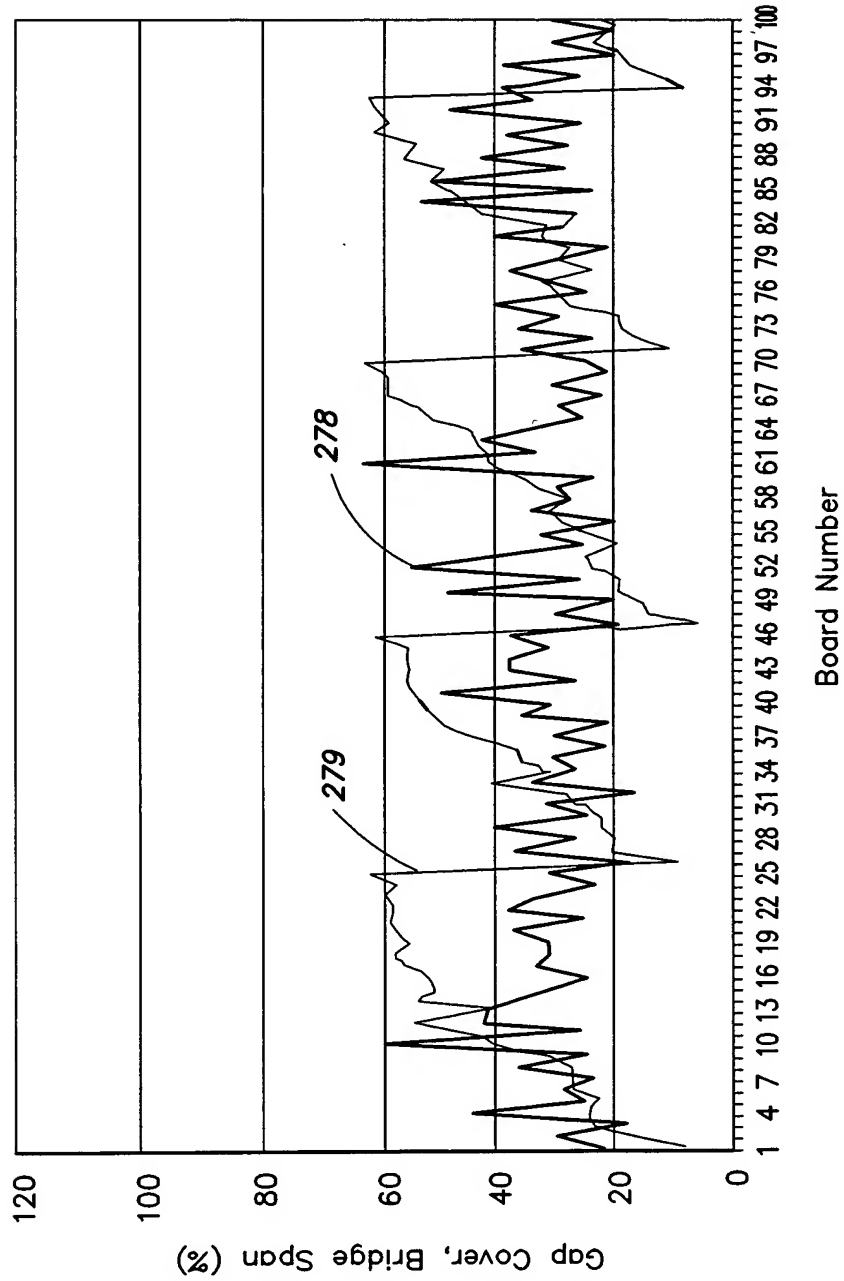


FIG. 2G

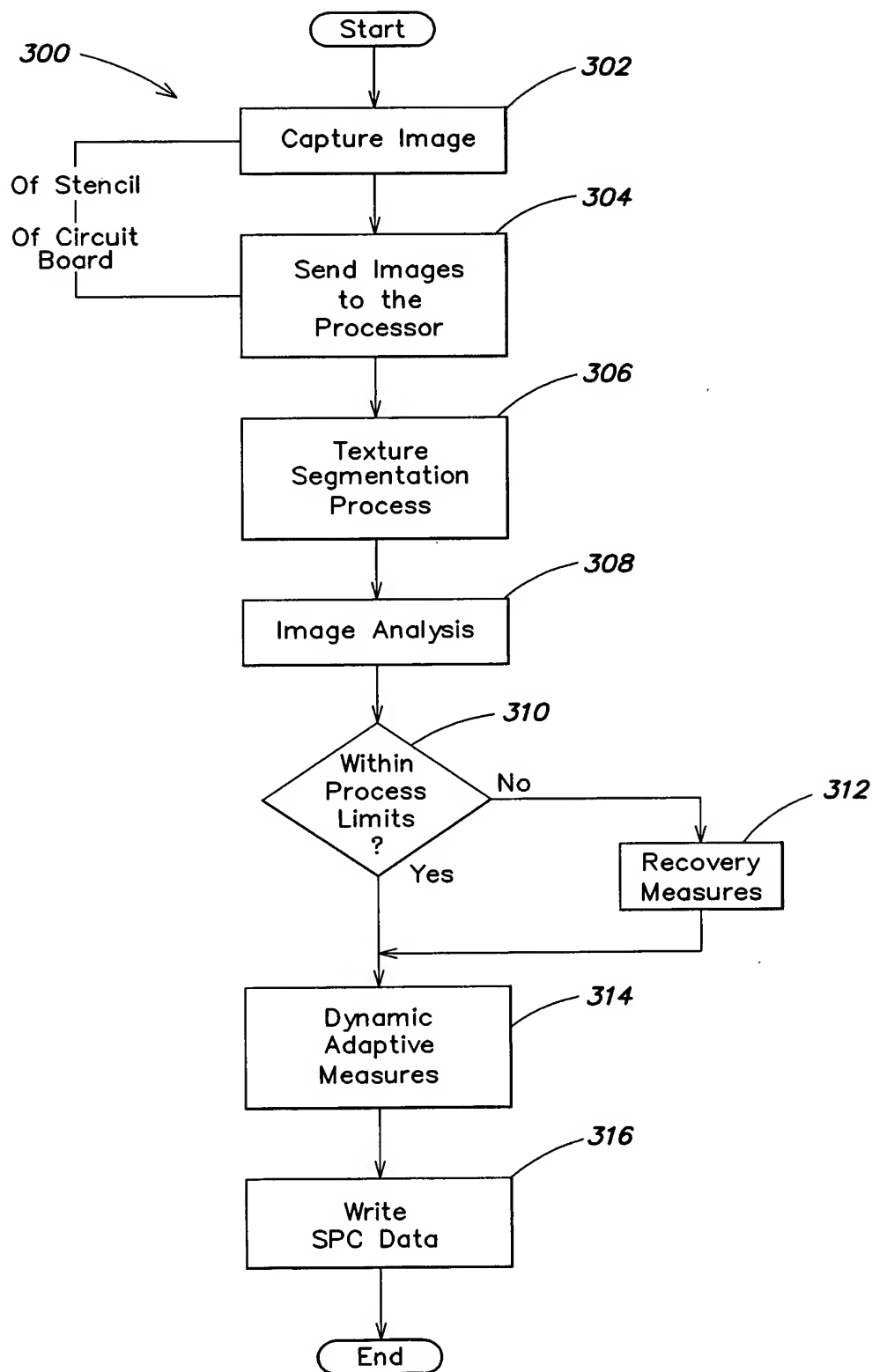


FIG. 3

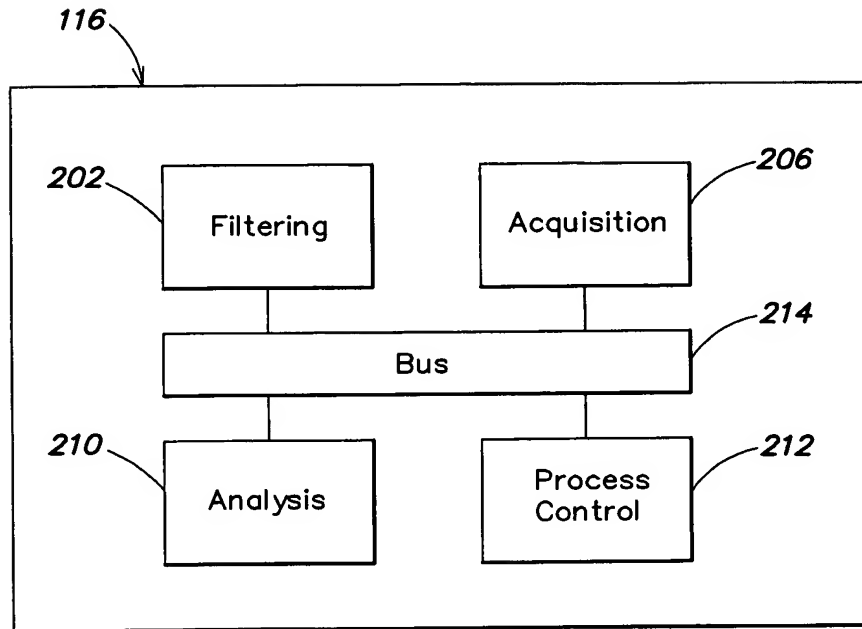


FIG. 4A

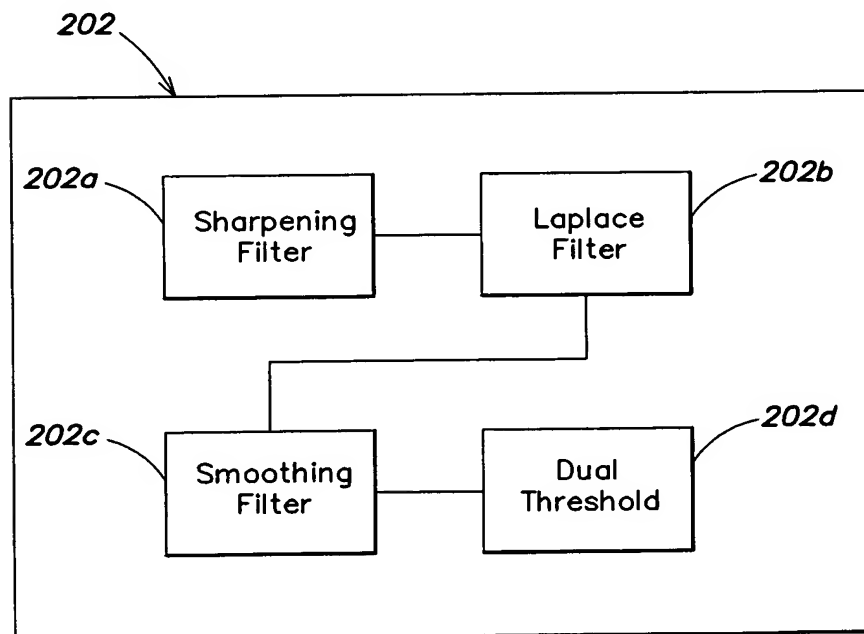


FIG. 4B

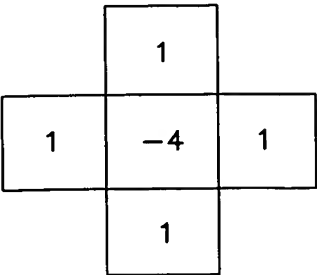


FIG. 5A

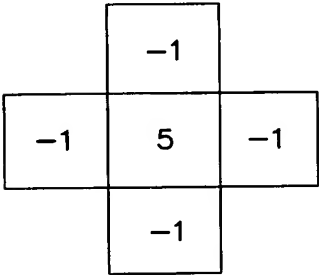


FIG. 5B

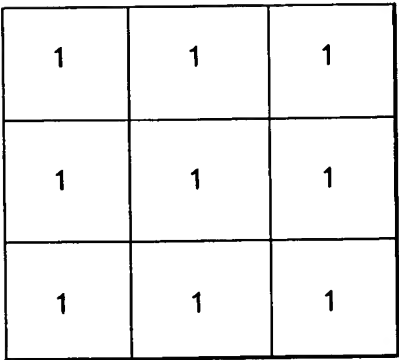


FIG. 5C

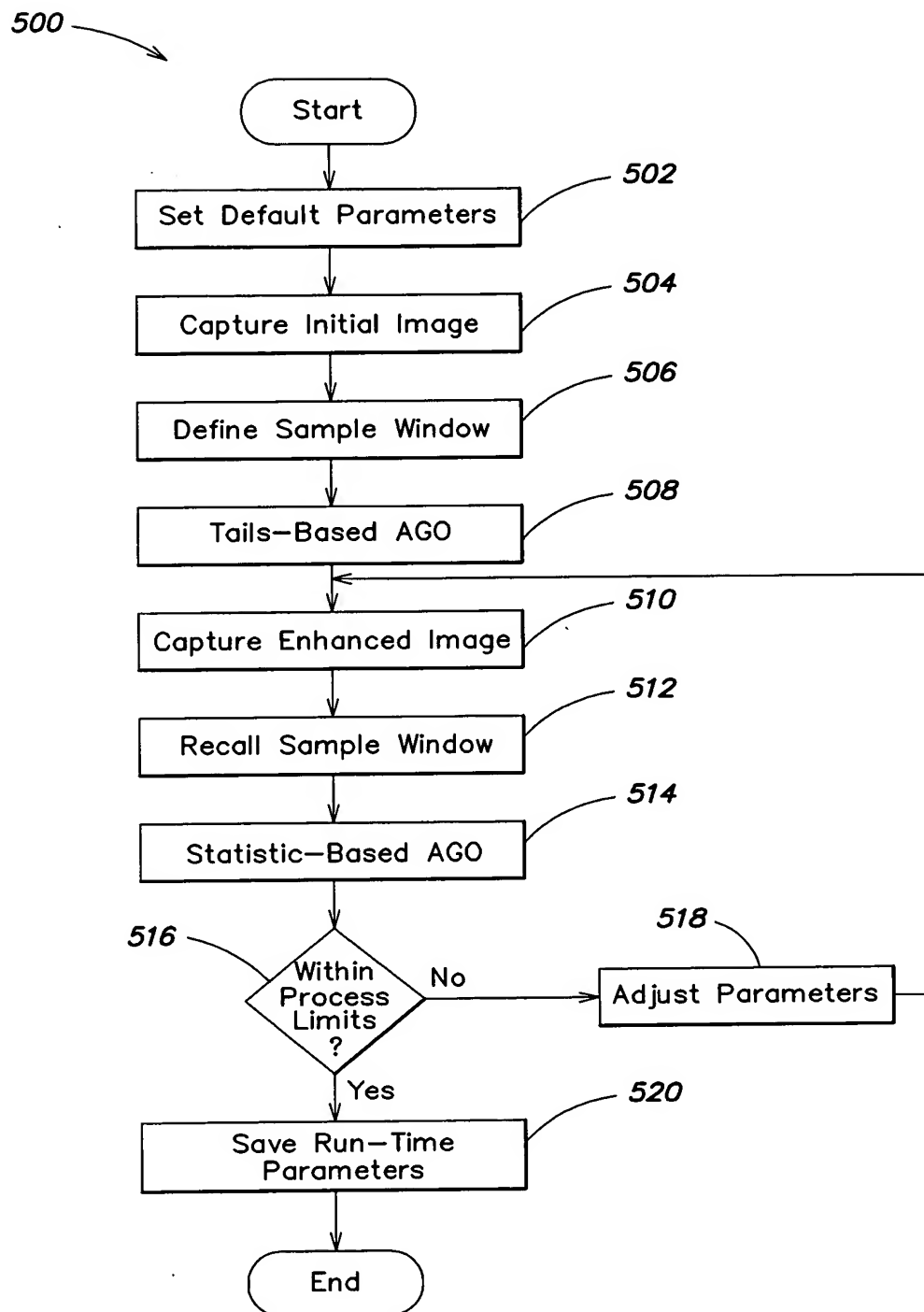


FIG. 6

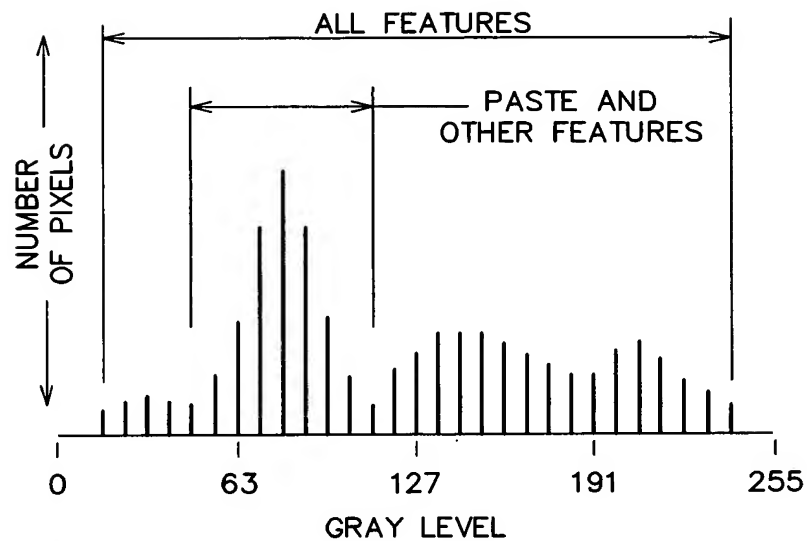


FIG. 7A

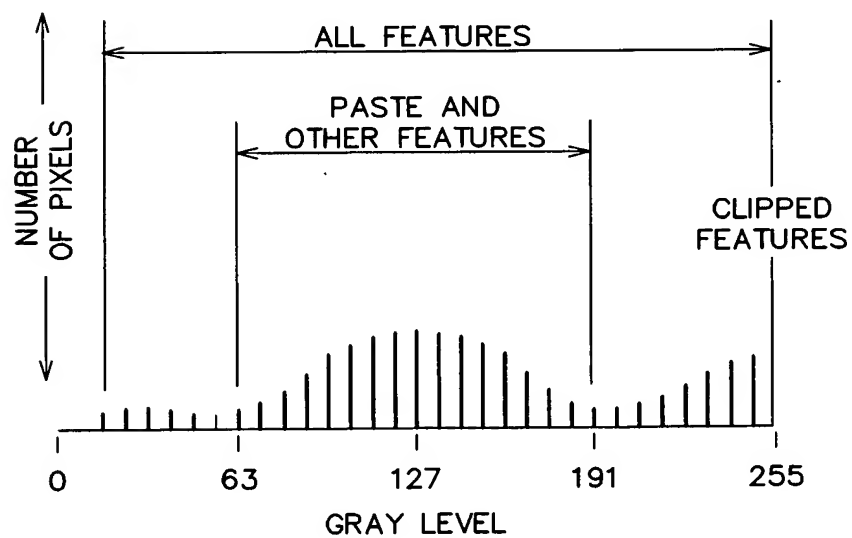


FIG. 7B

Ø1.3242

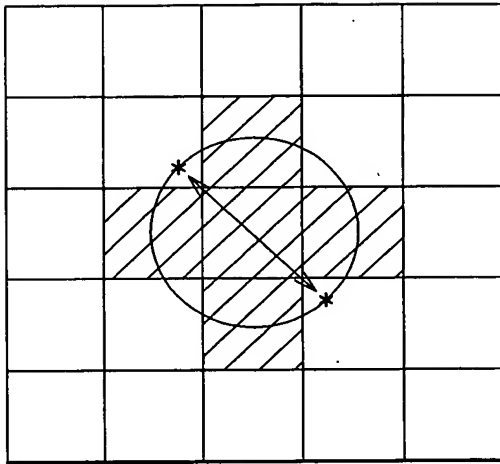


FIG. 8A

Ø1.8727

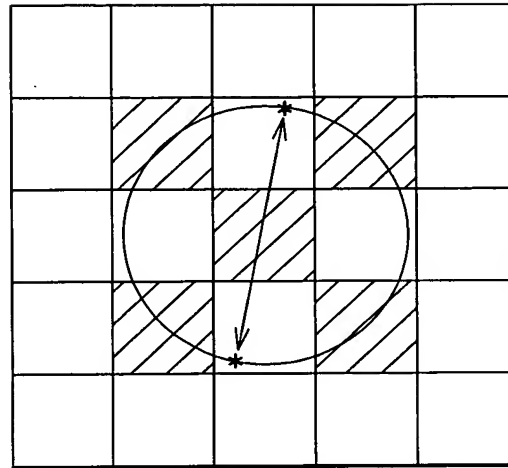


FIG. 8B

Ø2.6484

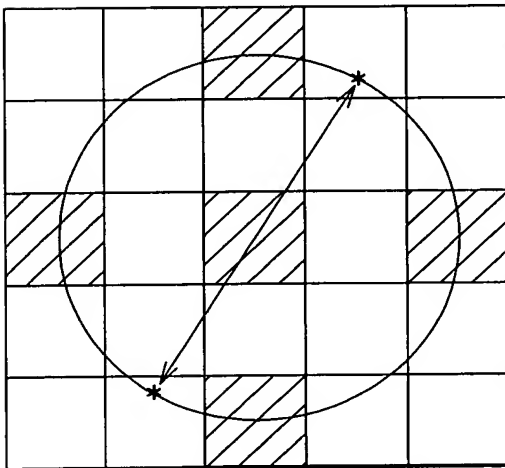


FIG. 8C

Ø3.7454

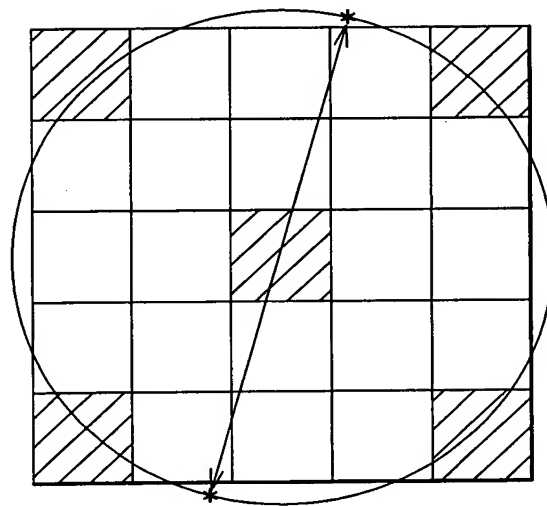


FIG. 8D

Ø0.9594

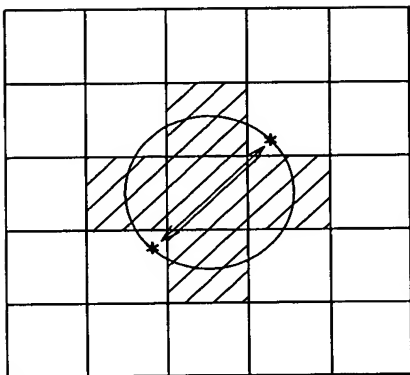


FIG. 8E

Ø1.3568

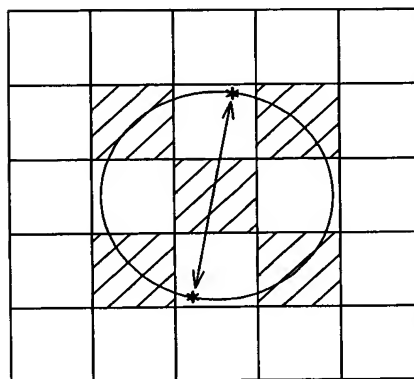


FIG. 8F

Ø1.9188

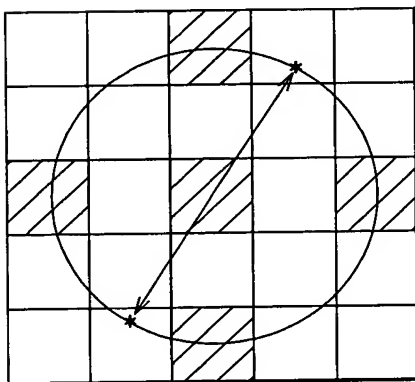


FIG. 8G

Ø2.7136

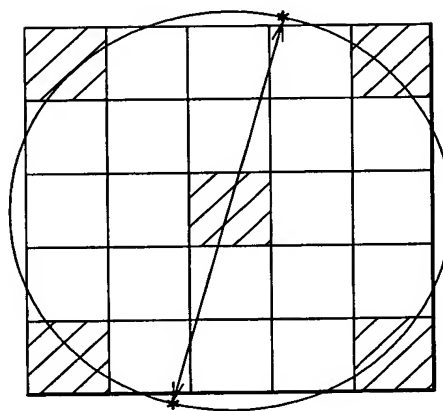


FIG. 8H

BEST AVAILABLE COPY

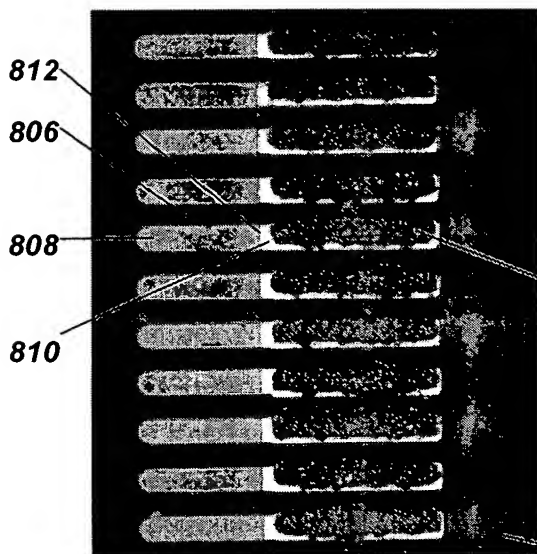


FIG. 9A

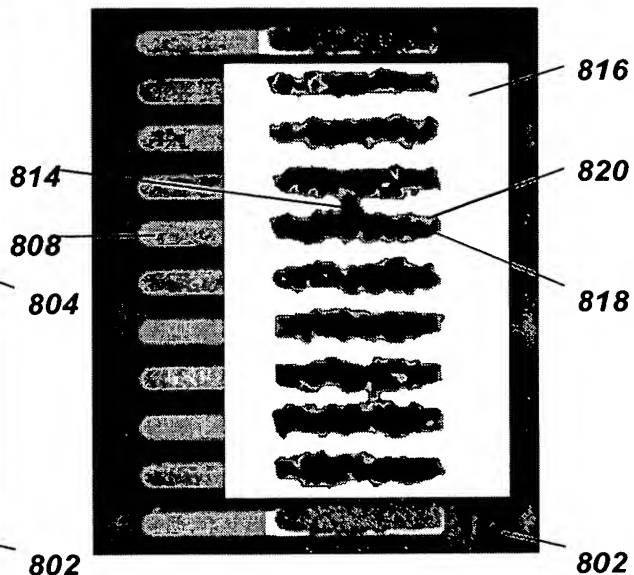


FIG. 9B

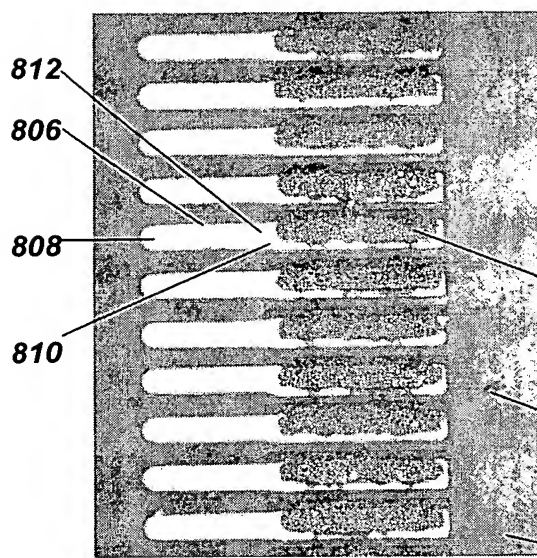


FIG. 9C

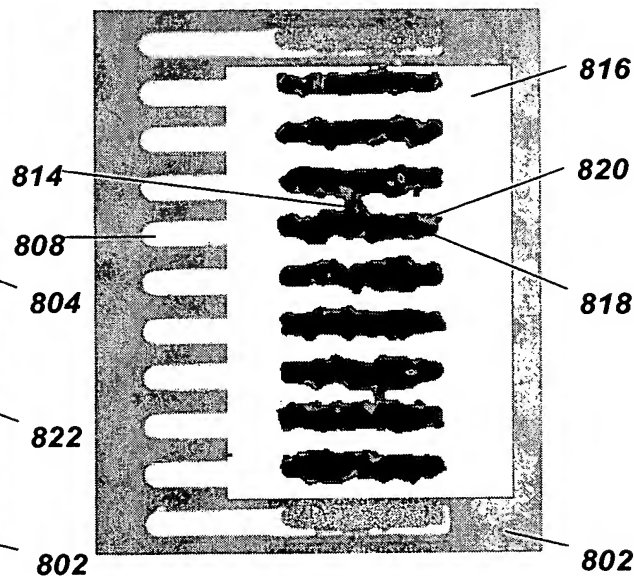


FIG. 9D

BEST AVAILABLE COPY

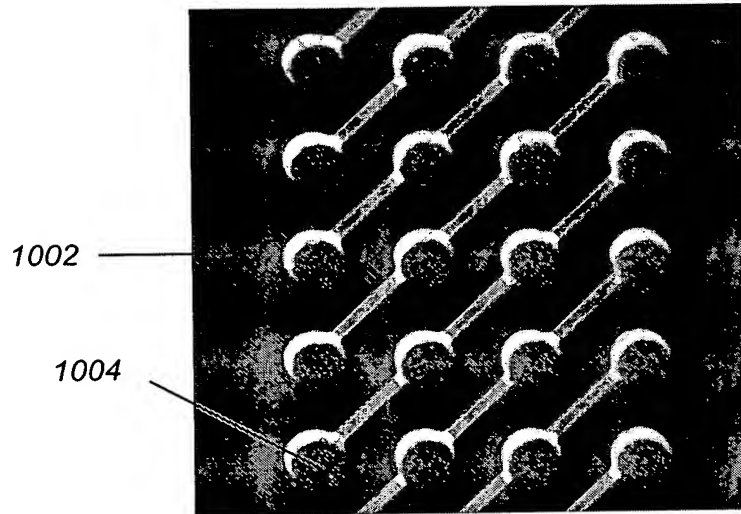


FIG. 10A

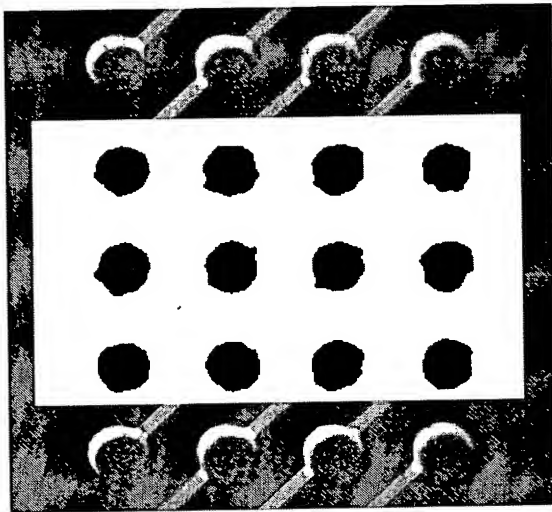


FIG. 10B

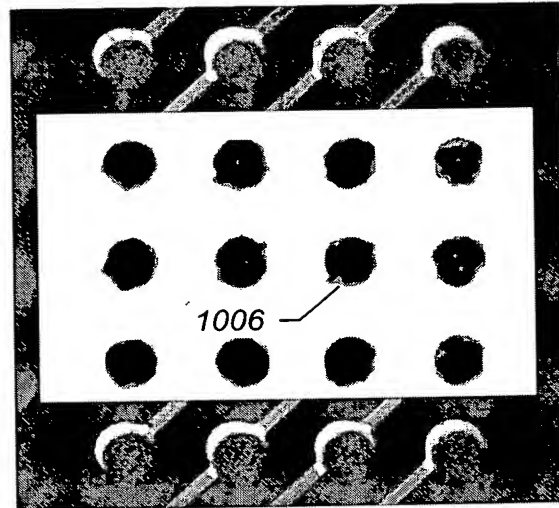


FIG. 10C

BEST AVAILABLE COPY

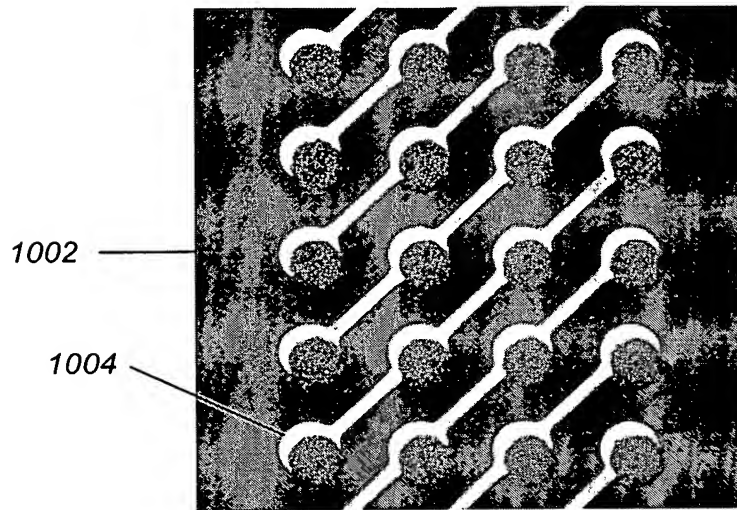


FIG. 11A

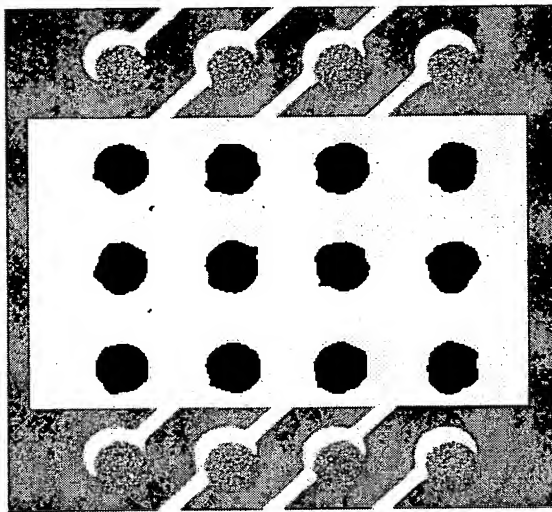


FIG. 11B

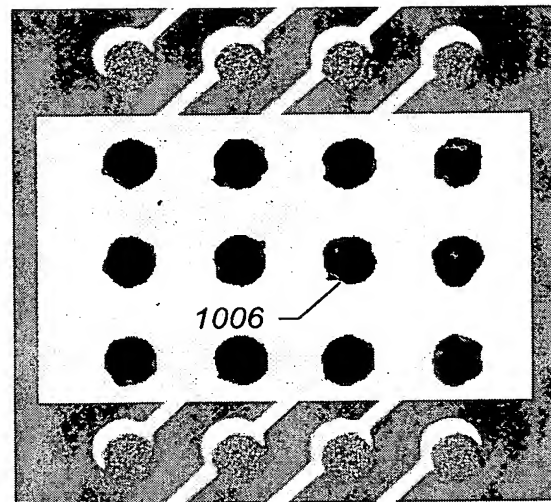


FIG. 11C

BEST AVAILABLE COPY

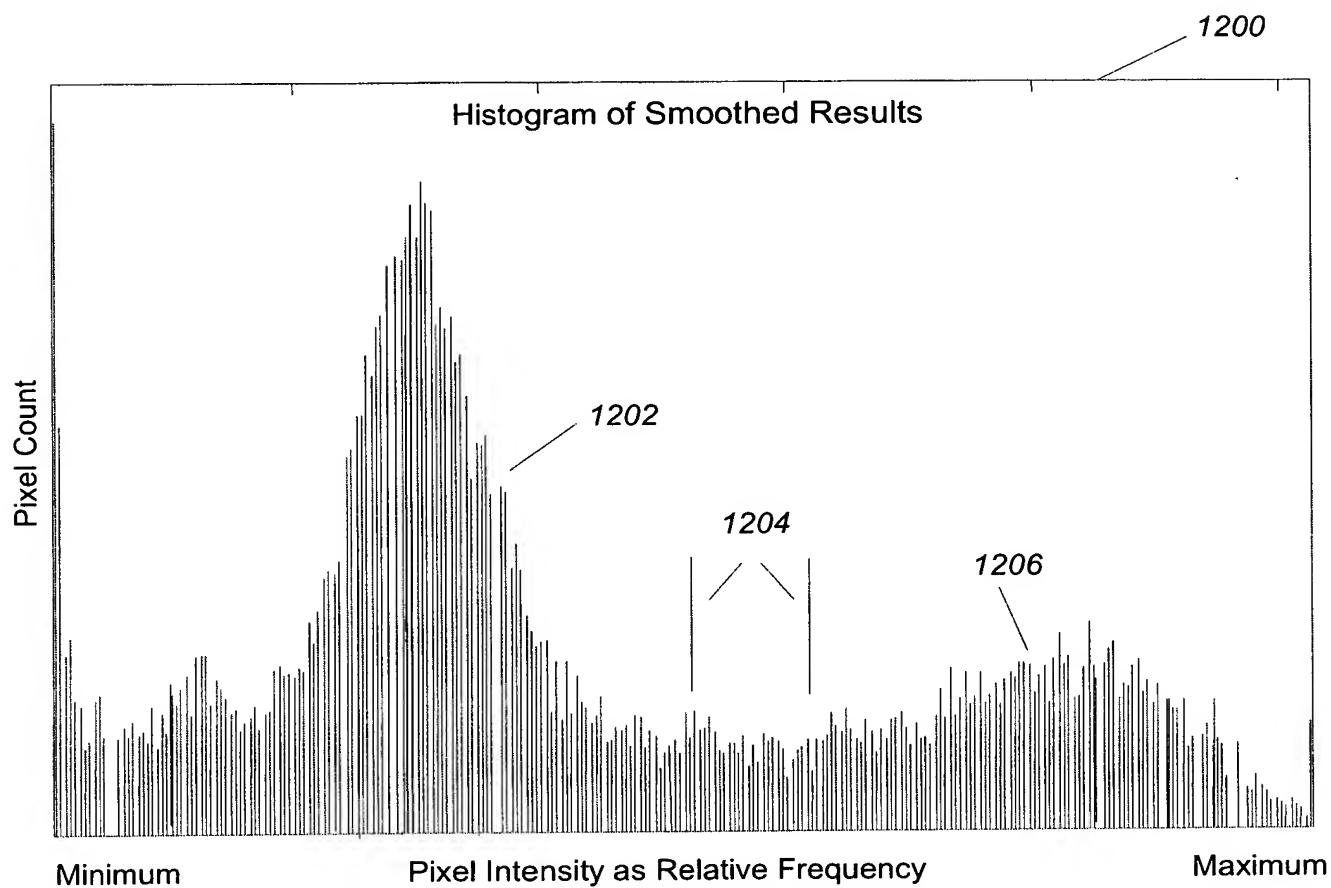


FIG. 12

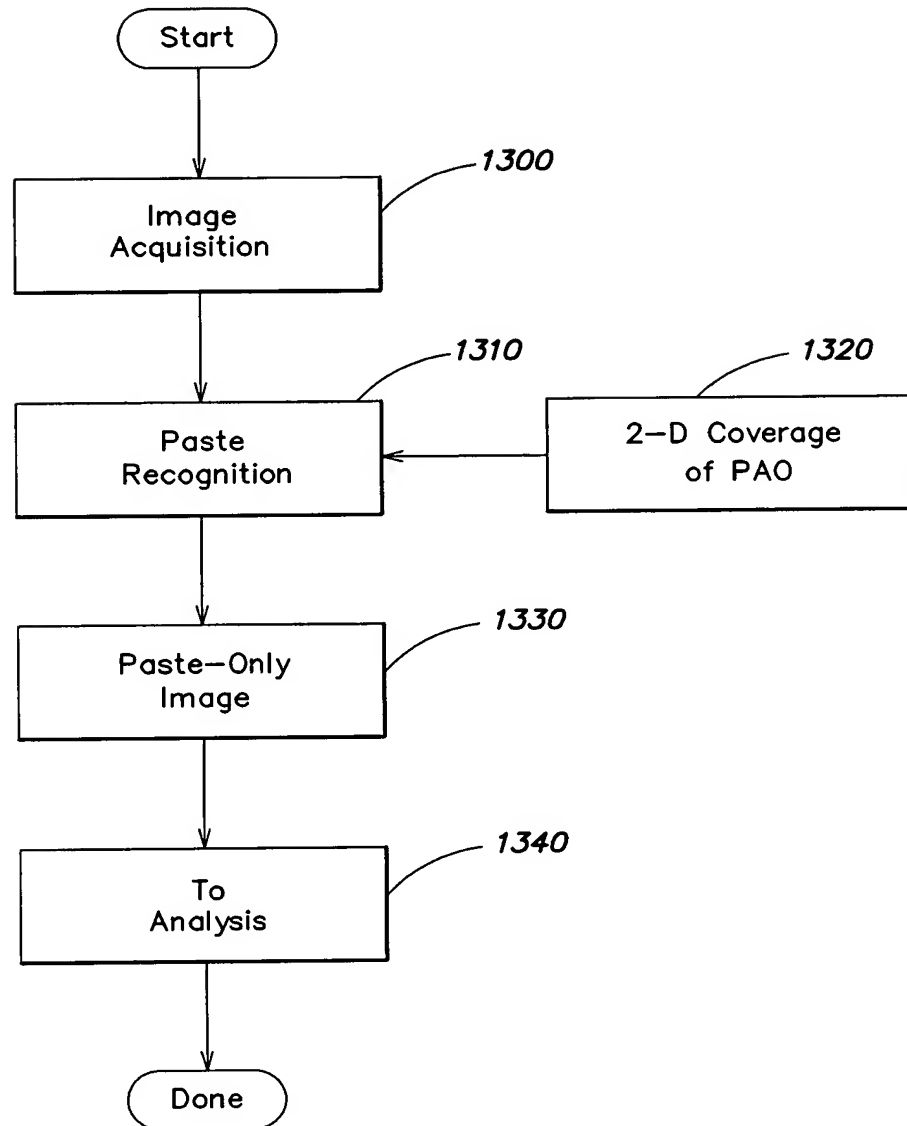
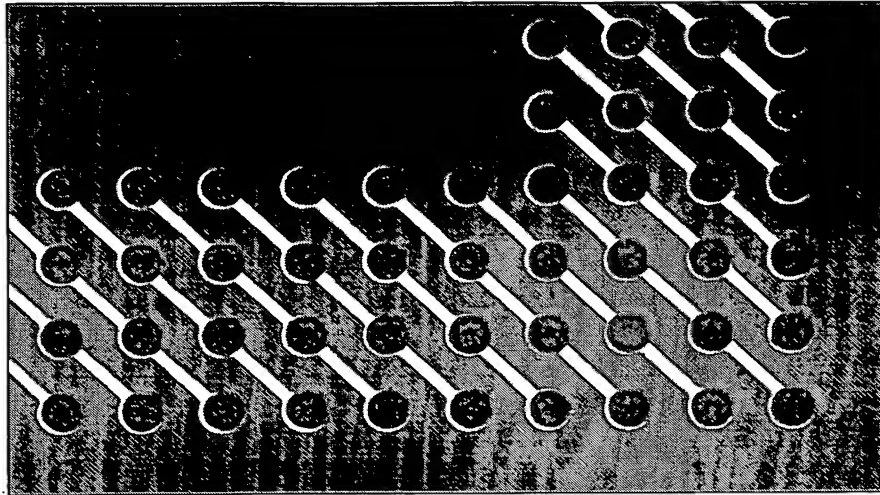


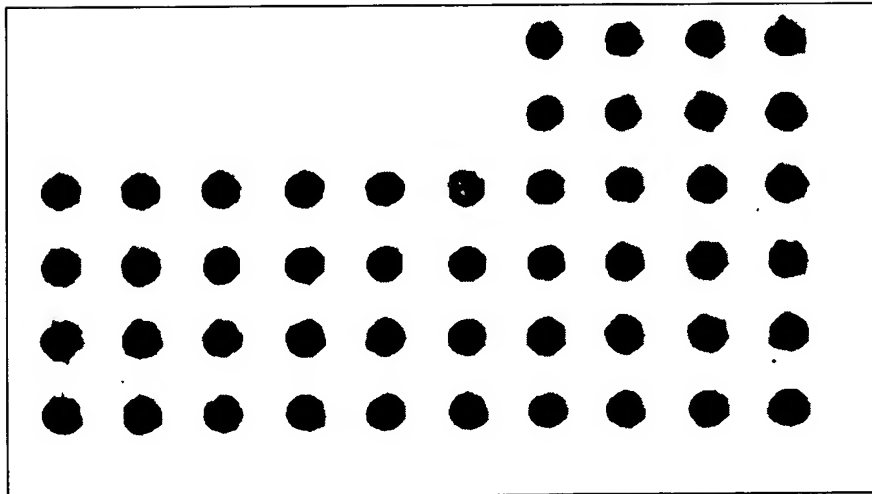
FIG. 13
(Prior Art)

BEST AVAILABLE COPY



Grayscale image of paste
using "white" light source.

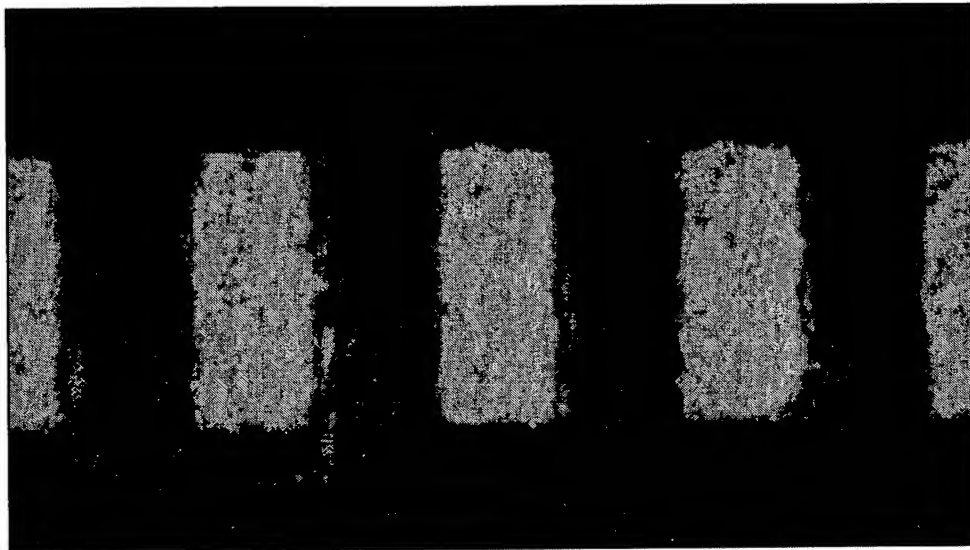
FIG. 14



Weighted paste-only image
via unique texture-based method.

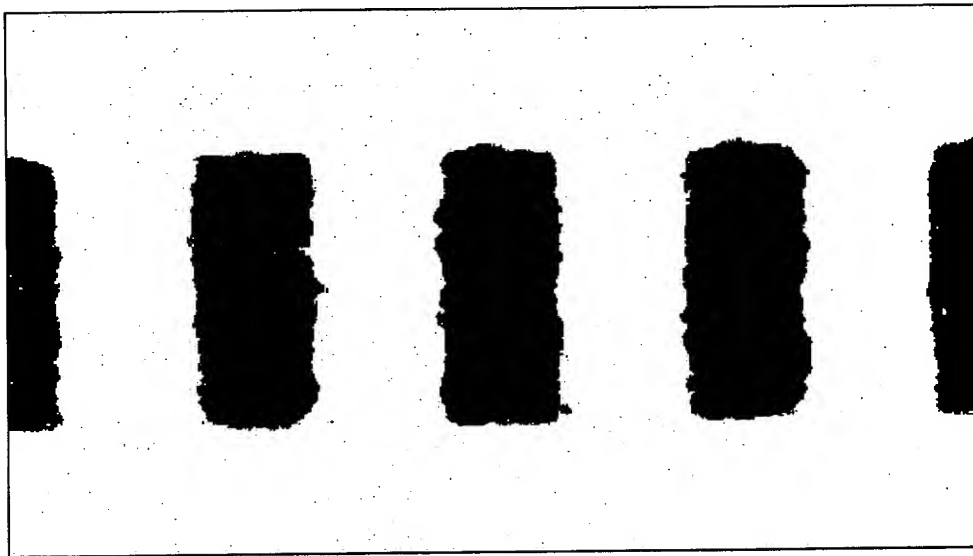
FIG. 15

BEST AVAILABLE COPY



RGB image of UV enhanced
Fluorescent paste.

FIG. 16



Binary paste-only image from blue channel
Via single threshold method.

FIG. 17

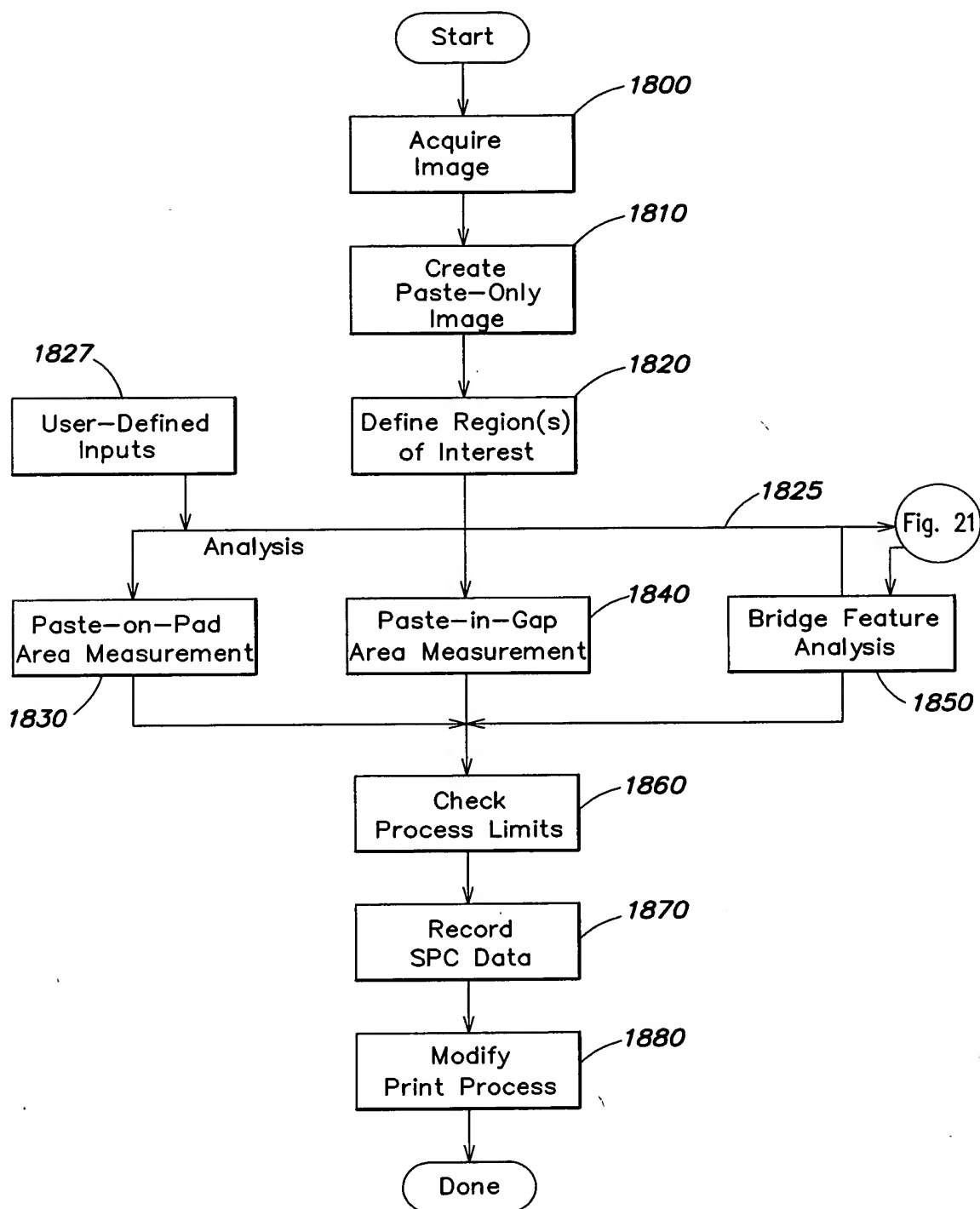
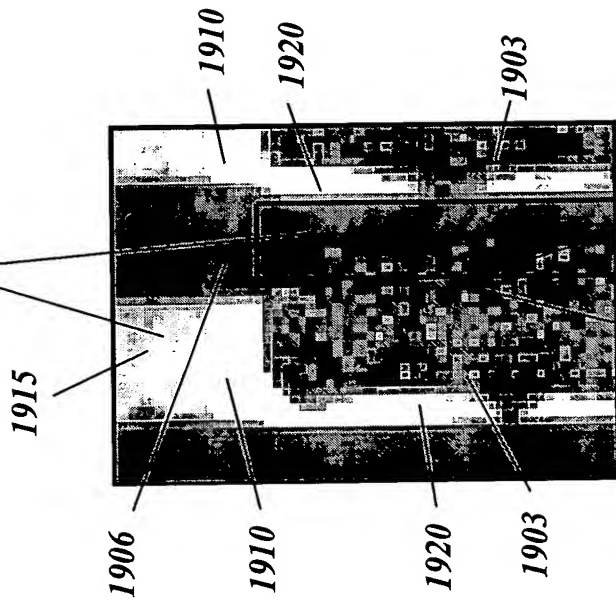


FIG. 18

BEST AVAILABLE COPY

FIG. 19A

Solder Mask is
 High and to the
 Right



Paste
 Deposit is
 Shifted
 Right into
 the Gap

FIG. 19A

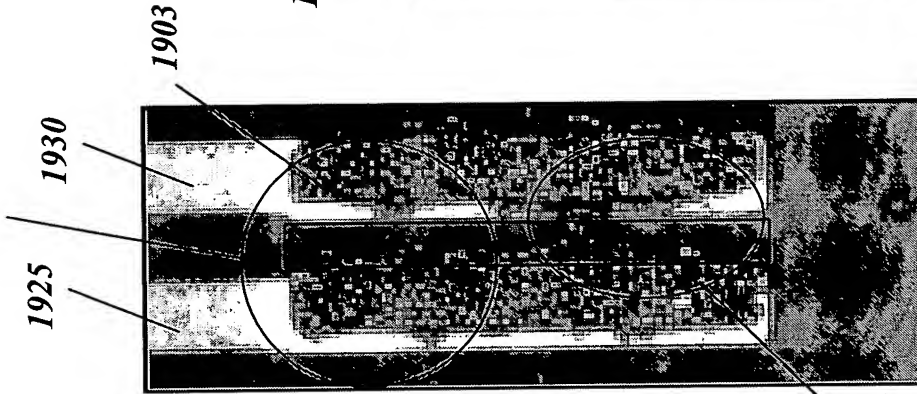


FIG. 19B

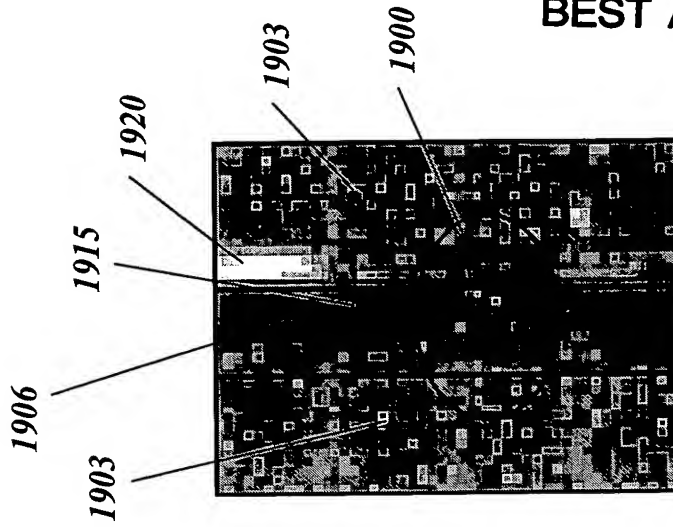


FIG. 19C

BEST AVAILABLE COPY

FIG. 20A

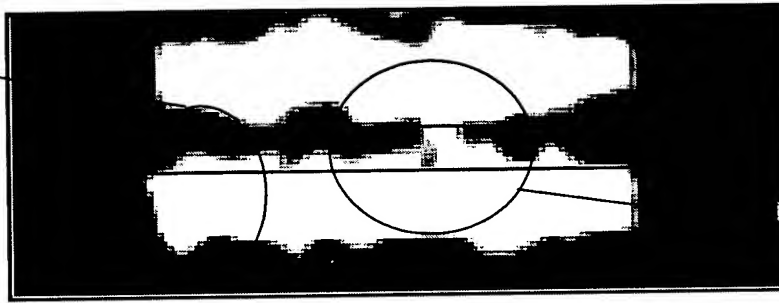
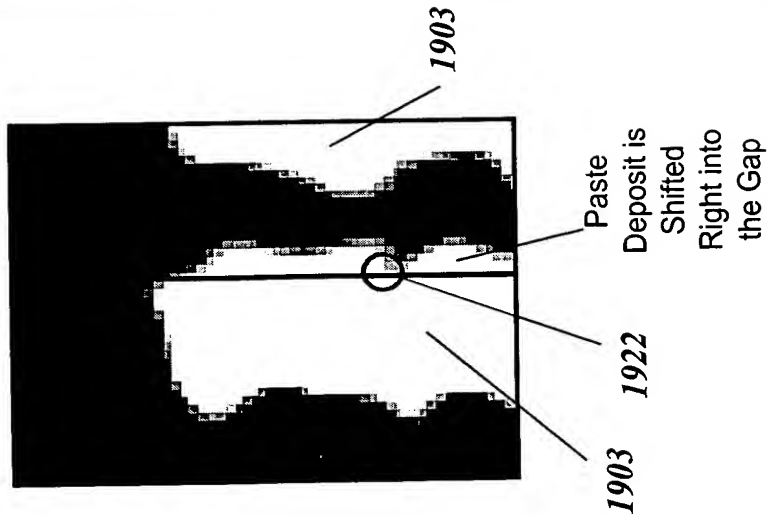


FIG. 20C

FIG. 20C

FIG. 20B

FIG. 20A



Weighted
Shades of
Gray

1903

1903

1900

1903

Paste
Deposit is
Shifted
Right into
the Gap

1922

1903

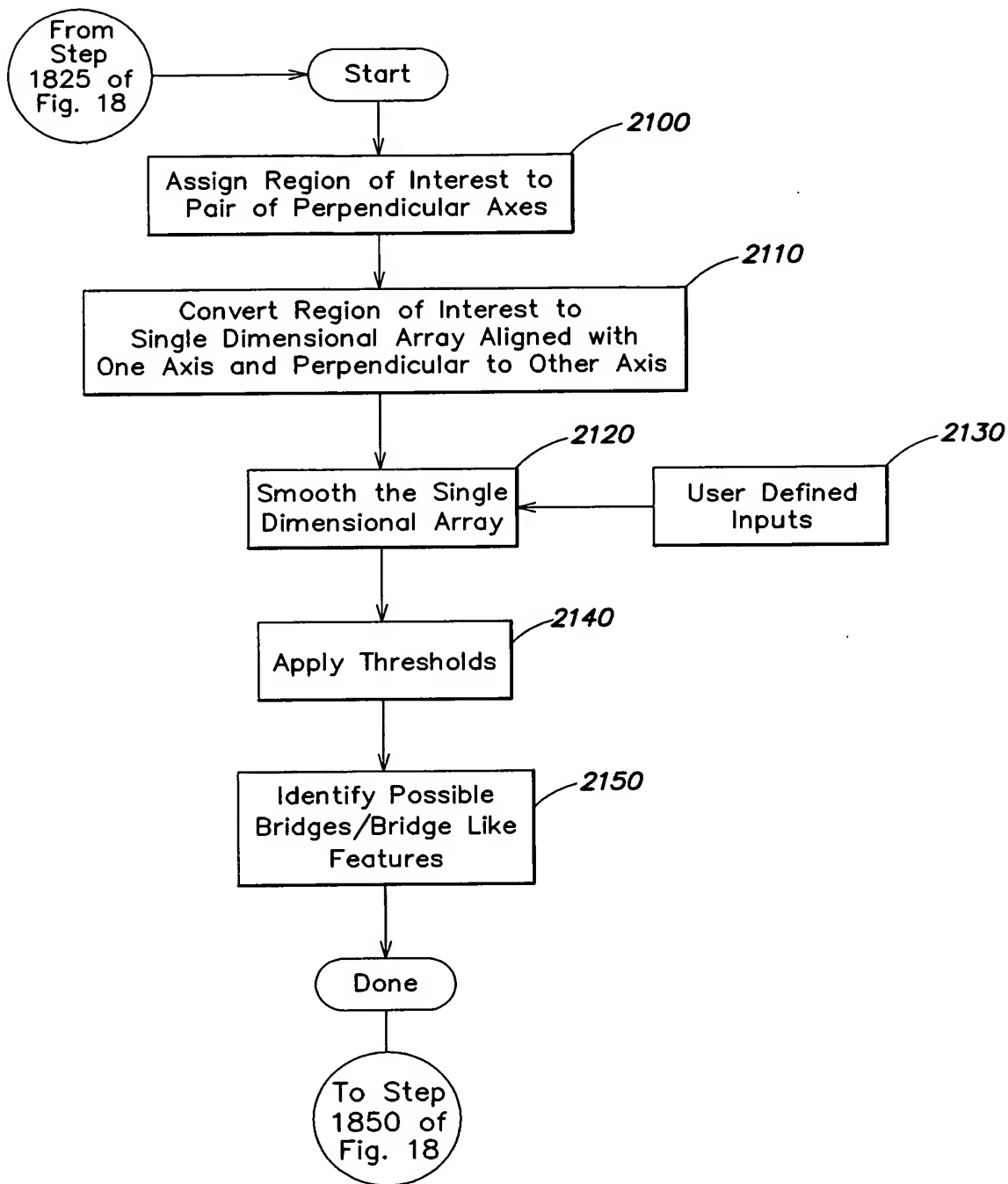


FIG. 21

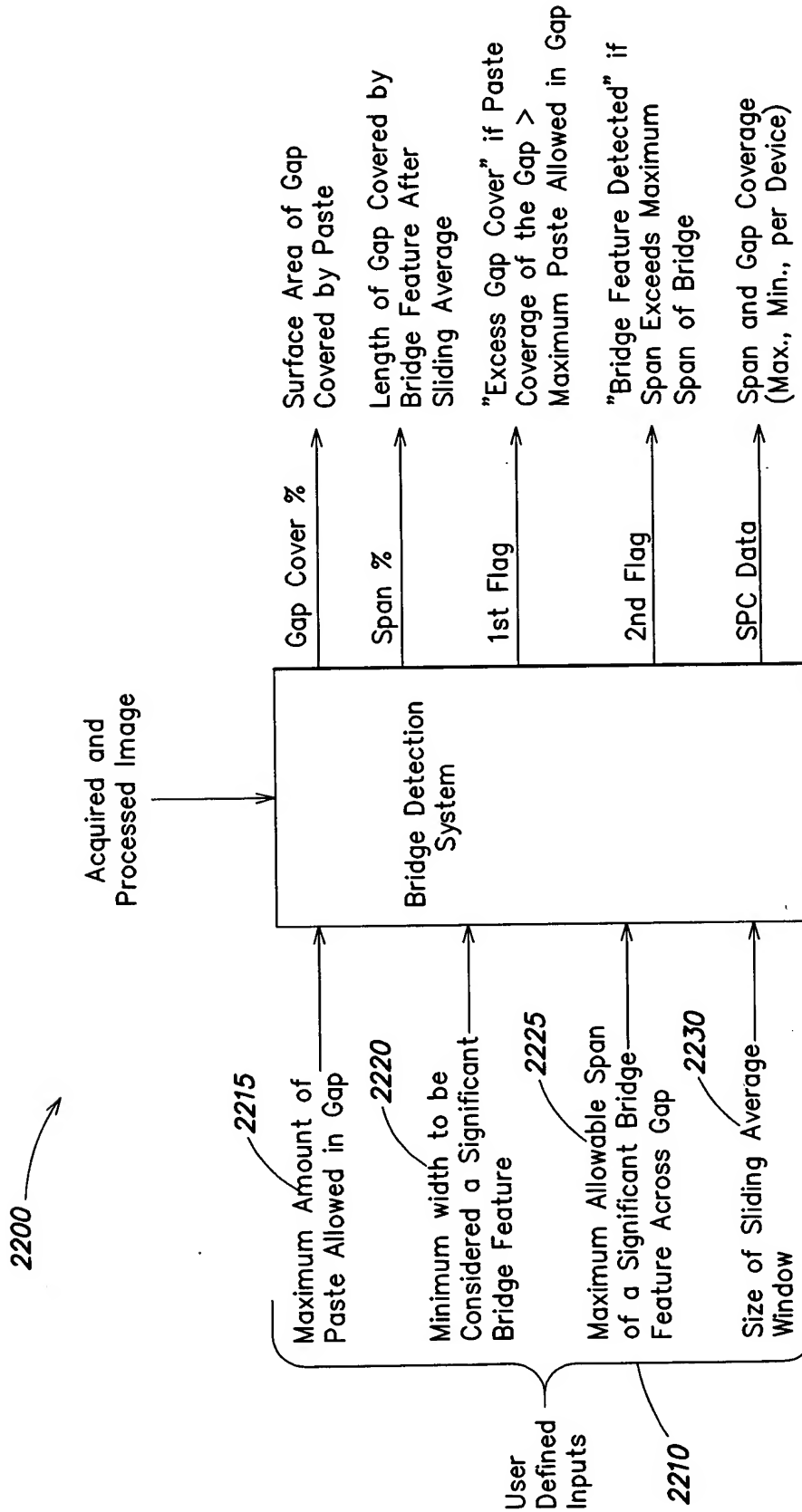


FIG. 22

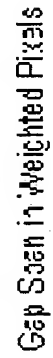
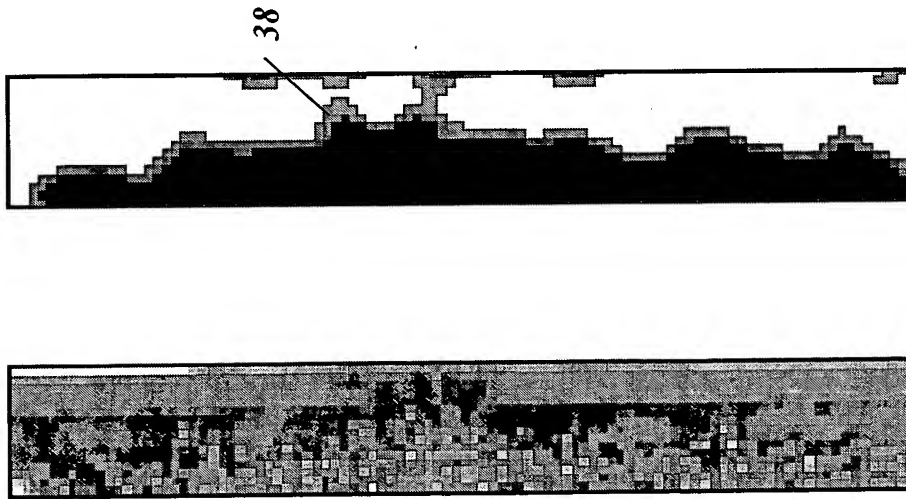


FIG. 23A



BEST AVAILABLE COPY

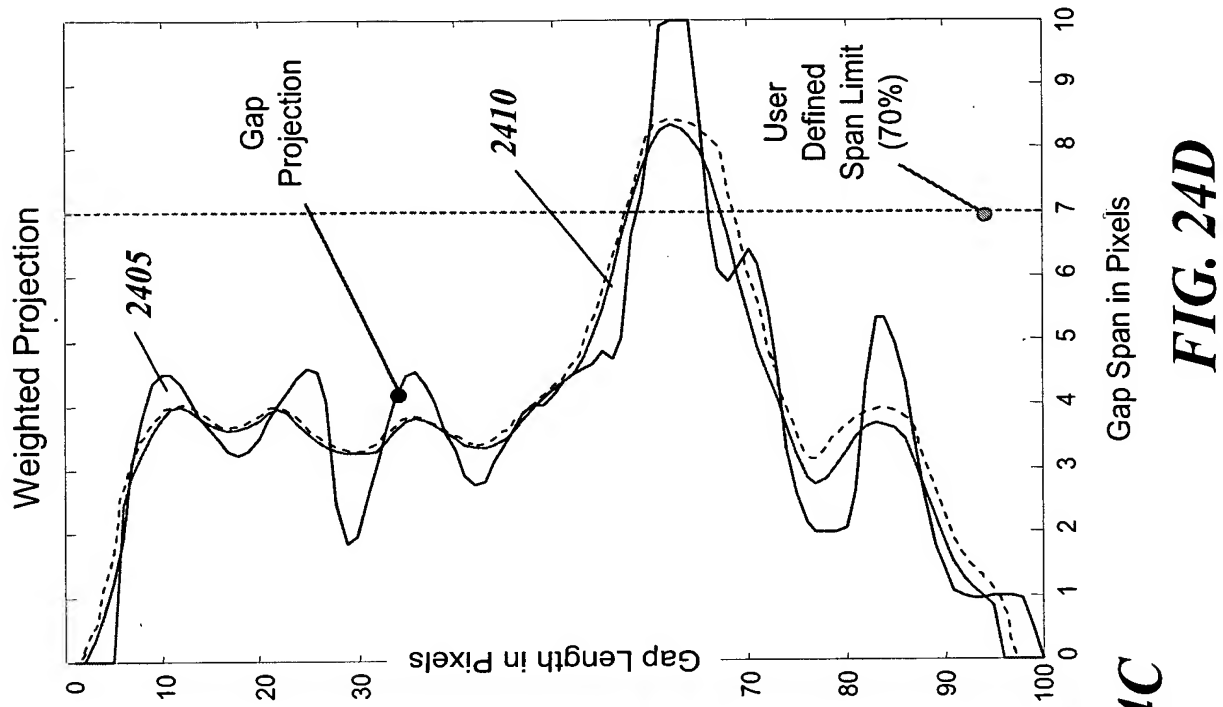


FIG. 24D

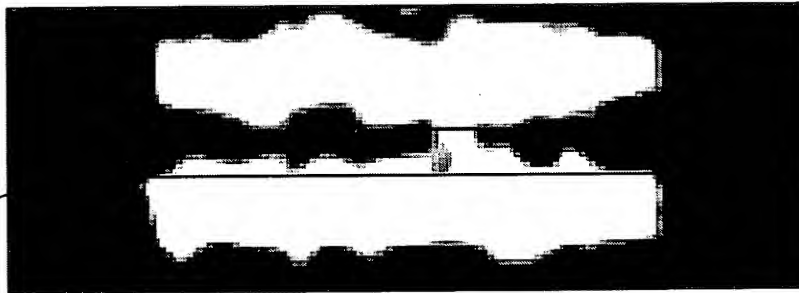


FIG. 24B

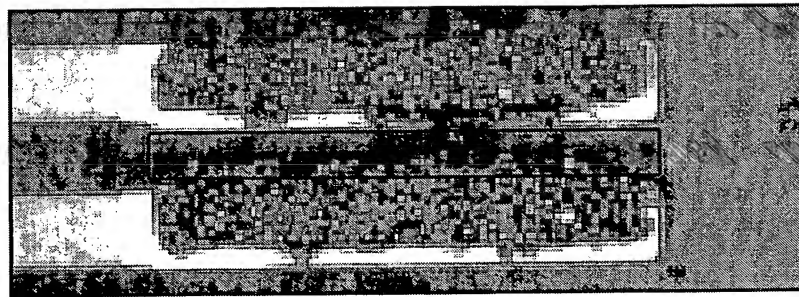


FIG. 24A

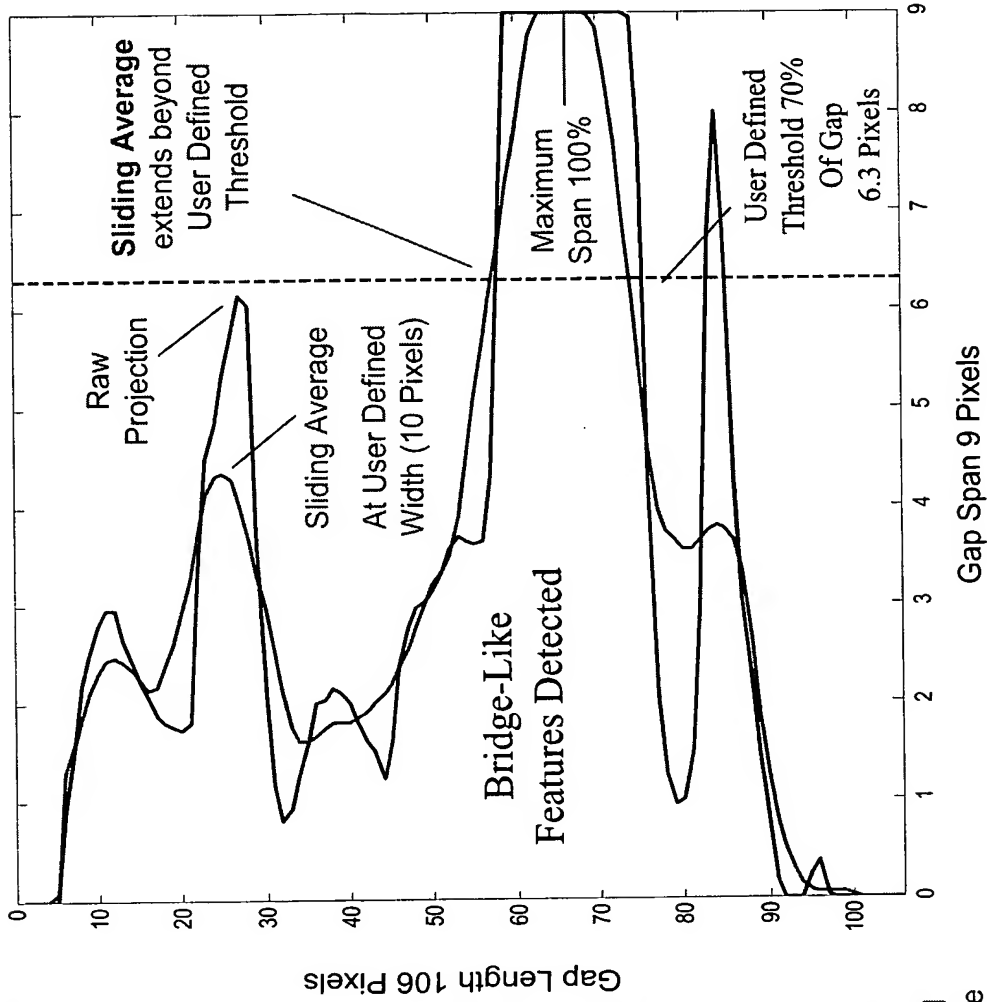
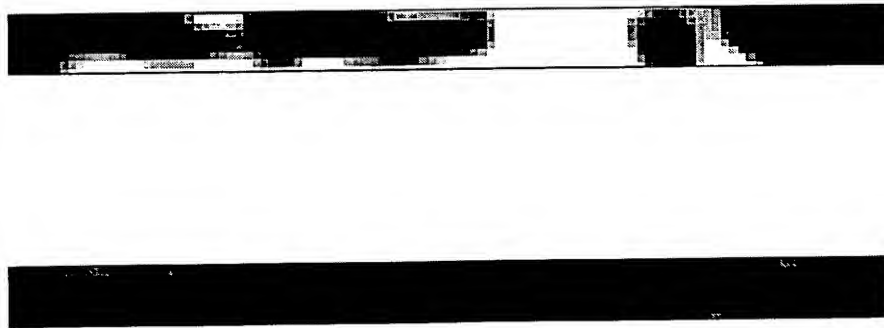


FIG. 25C



36% Weighted
Paste Coverage
in Gap

FIG. 25A

FIG. 25B

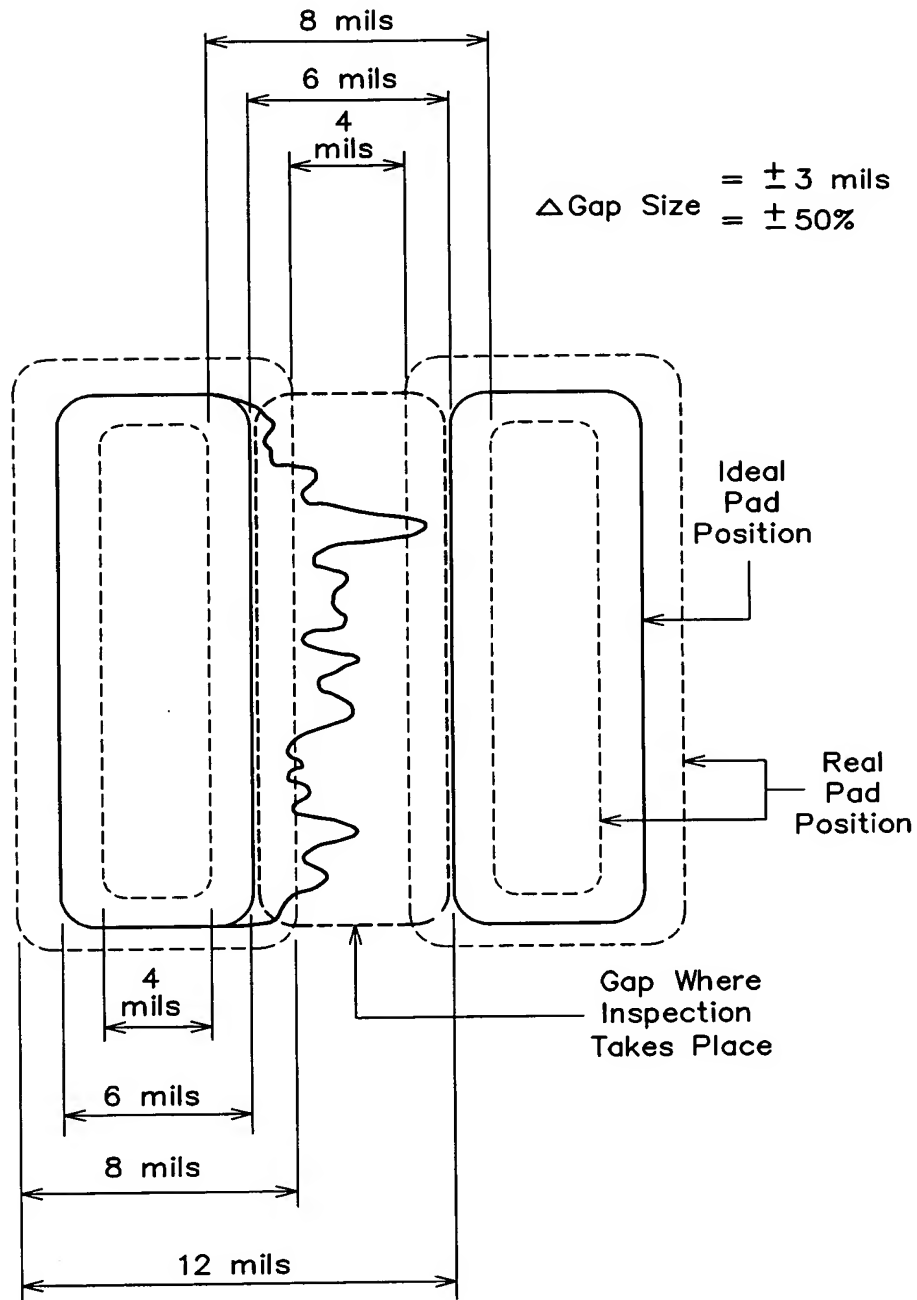


FIG. 26

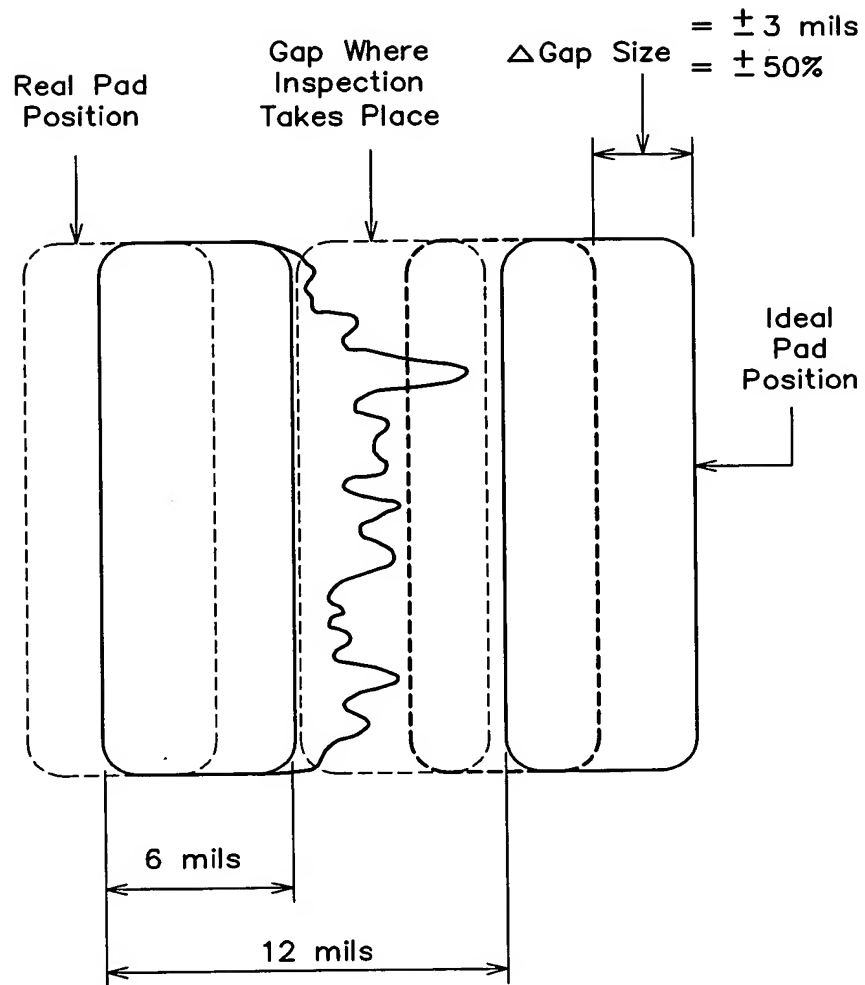


FIG. 27

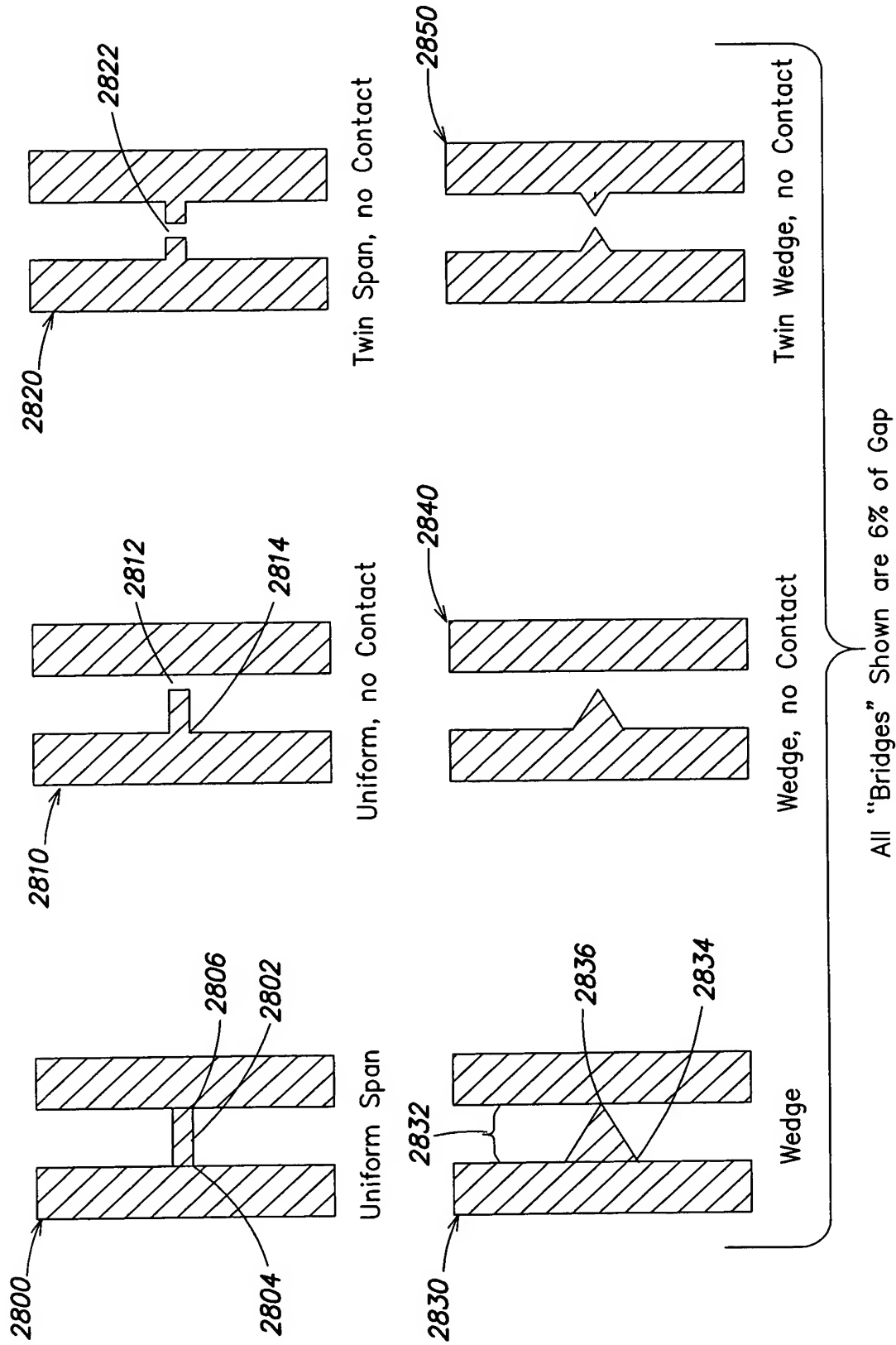
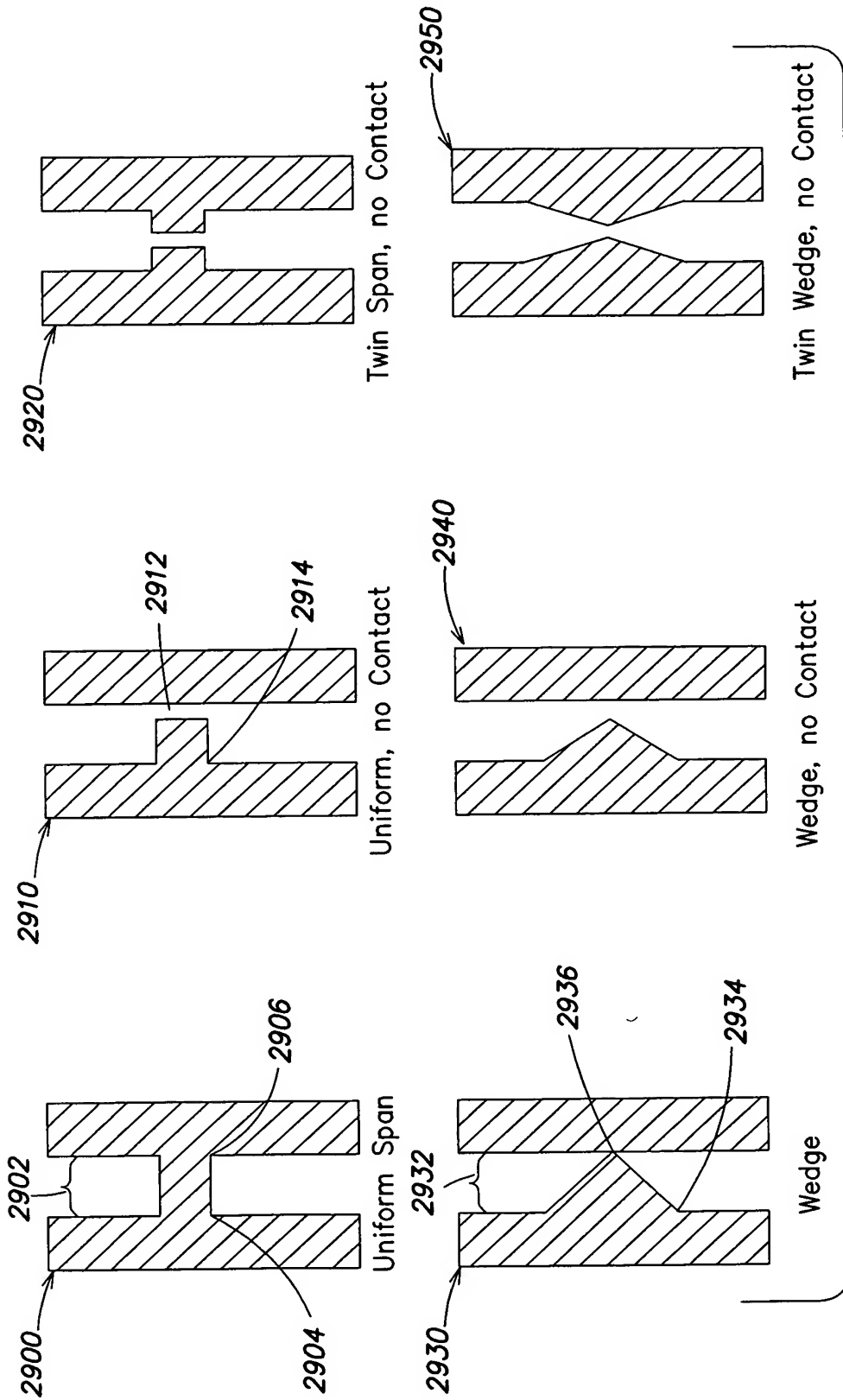


FIG. 28



"Bridges" are 18% of Gap

FIG. 29

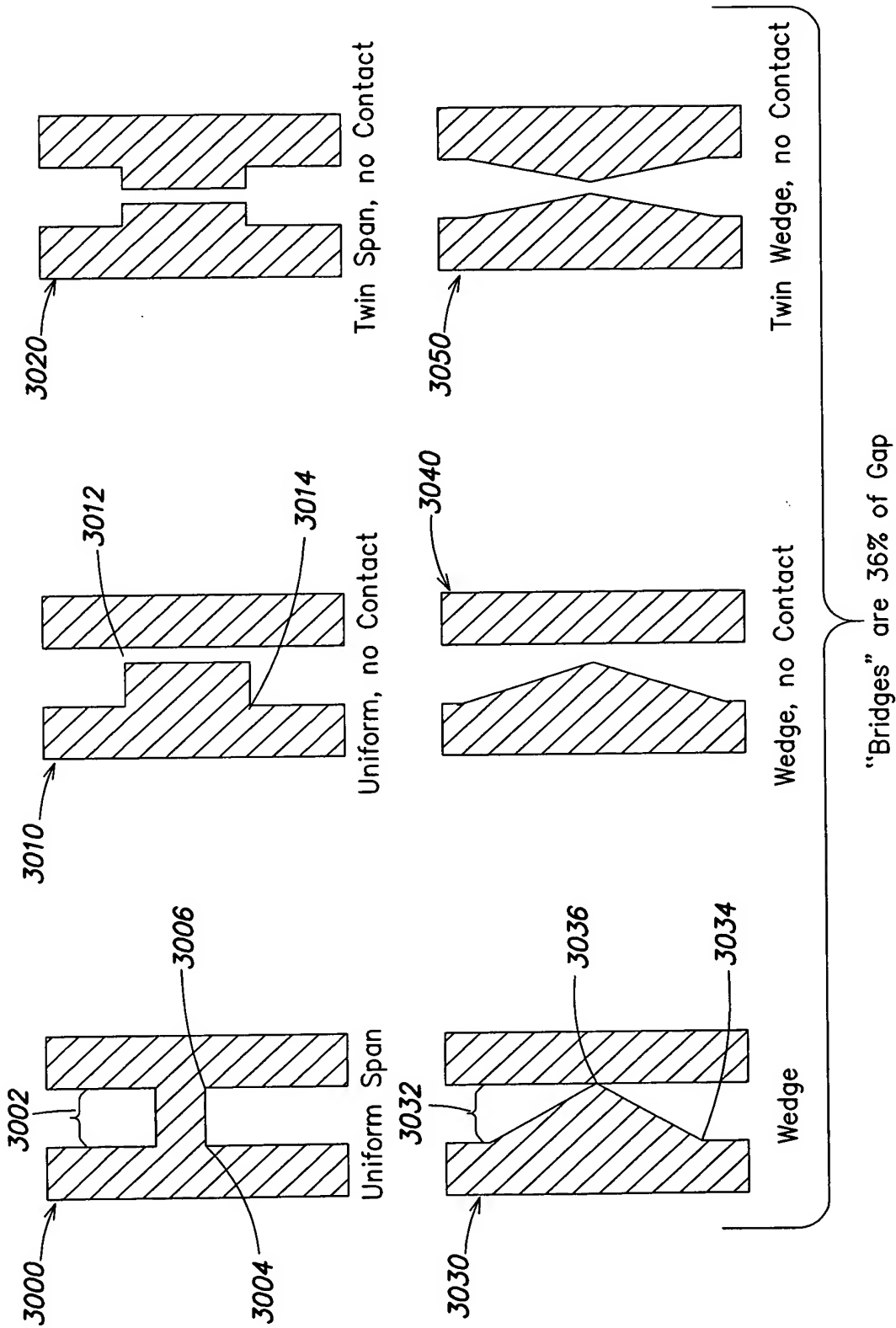


FIG. 30

